

Newsletter

of the History of Science Society

Vol. 41, No. 3

July 2012

WELCOME TO PHILADELPHIA!

by Babak Ashrafi, (PACHS)

The Philadelphia Area Center for History of Science (PACHS) and its consortium partners look forward to welcoming you to the 2012 Joint Meeting of the British Society for the History of Science, the Canadian Society for the History and Philosophy of Science, and the History of Science Society. The meeting will take place at the University of Pennsylvania (UPenn) with an opening key-note lecture at the American Philosophical Society (APS) and a reception



at the Chemical Heritage Foundation (CHF). In addition to attending many stimulating conference sessions, participants will have opportunities to tour several other consortium members: the Mutter Museum at the College of Physicians of Philadelphia (founded 1787), the Academy of Natural Sciences of Drexel University (founded 1812), and the Wagner Free Institute of Science (founded 1855) and to visit many other sites in a city rich in history and historical collections.

Philadelphia is home to some of the New World's oldest scientific institutions. They, and other area institutions established later, have been collecting books, manuscripts and other historic artifacts since the eighteenth century and their collections now span most of the world and reach back to the fifteenth century. PACHS, now five years old, provides research fellowships for using area collections, hosts academic and public events, and produces online resources about the history of science, technology and medicine: <http://www.pachs.net/>.

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The Old City neighborhood, where the APS and CHF are located, has many of the city's best restaurants and galleries and is home to an active nightlife. Dining options of every variety, live music, and many other entertainment options are within easy walking distance. Within a few blocks you will find: Independence Hall and the Liberty Bell, Pennsylvania Hospital (North America's oldest), with its archives and surgical amphitheater, the home of Phillip Syng Physick (known as the "father of American surgery"), Christ Church Burial Ground, Elfreth's Alley (oldest continually inhabited street in the U.S.), historic City Tavern, the First and Second Banks of the United States, Carpenters' Hall, Franklin Court Museum and Historic Site, the Betsy Ross House and the Athenaeum of Philadelphia. Restaurants, nightlife, historic sites, museums and libraries are sprinkled from Old City by the Delaware River across Philadelphia to UPenn in University City by the Schuylkill River. Of particular interest to conference participants would be the Library Company of Philadelphia (established in 1731), the Historical Society of Pennsylvania (1824) and the Franklin Institute (also founded in 1824)—in addition to the libraries and museums of the APS, CHF and UPenn.

Philadelphia is once again a growing city with a vibrant cultural and intellectual life. The region is home to a large and active community of historians of science. The city has an extensive mass transit system and easy bus, rail and air connections to other cities in the US, Canada and UK. We are very pleased to be helping with the local arrangements for the Three Societies Meeting this year and look forward to welcoming you to Philadelphia, a city in which all historians can find something to enjoy.

[HSS would like to offer its special thanks to the University of Pennsylvania, the Chemical Heritage Foundation, the Philadelphia Area Center for the History of Science, and the American Philosophical Society for their support of the joint meeting.]

History of Science Society

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EDITORIAL POLICIES, ADVERTISING AND SUBMISSIONS

The *History of Science Society Newsletter* is published in January, April, July, and October, and sent to all individual members of the Society.

The *Newsletter* is edited and published in the Executive Office. The format and editorial policies are determined by the Executive Director in consultation with the Committee on Publications and the Society Editor. All advertising copy must be submitted in electronic form. Advertisements are accepted on a space-available basis only, and the Society reserves the right not to print a submission. The rates are as follows: Full page (7 x 9.25"), \$625; Horizontal or Vertical Half page (7 x 4.6"), \$375; Quarter page (3.5 x 4.6"), \$225. The deadline for insertion orders is six weeks prior to the month of publication and should be sent to the attention of the HSS Executive Office. The deadline for news, announcements, and job/fellowship/prize listings is firm: Six weeks prior to the month of publication. Long items (feature stories) should be submitted eight weeks prior to the month of publication. Please send all material to the attention of the executive office: info@hssonline.org.

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NEWS FROM THE PROFESSION

CHF Fellows Announcement

The Chemical Heritage Foundation is pleased to announce the appointments of the Beckman Center Fellows for the academic year 2012–2013, the 25th anniversary of the fellowship program at CHF. CHF will welcome one Distinguished Fellow, 8 long-term fellows and 8 short-term fellows. Below are the fellows, their affiliations, and the title of their research topics. Applications for 2013–2014 Long- and Short-Term Fellowships will be available in early fall at www.chemheritage.org/BeckmanCenter.

Cain Distinguished Fellow

(4 months in residence)

1. Jan Golinski (University of New Hampshire)

Long-Term Postdoctoral Fellows

(9-months in residence unless otherwise specified)

1. Laura Ann Kalba (Smith College), Edelstein Fellow: “Color in the Age of Impressionism: Technology, Commerce, and Art”
2. Benjamin Gross (CHF), Cain Fellow: “The Engineer’s Toolkit: Passive Components and the American Electronics Industry”
3. Mat Savelli (McMaster University, Canada), Haas Fellow: “A Comparative History of Psychopharmaceutical Print Advertising”

4. Adelheid Voskuhl (Harvard University), Doan Fellow (5 months): “Engineering as Institution: Technical and Technocratic Elites in Germany and the US, 1870 to 1935”

Long-Term Dissertation Fellows

(9 months in residence)

1. Ian Beamish (Johns Hopkins University), Haas Fellow: “Saving the South: Printing Agricultural Improvement in the American South, 1820–1865”
2. Deanna Day (University of Pennsylvania), Price Fellow: “98.6: Fevers, Fertility, and the Patient Labor of American Medicine”
3. Joel Klein (Indiana University), Edelstein Fellow: “Chymistry, Corpuscular Medicine, and Controversy: The Ideas and Influence of Daniel Sennert (1572–1637)”
4. David Singerman (MIT), Haas Fellow: “An Empire of Purity: Making the Modern Sugar Market, 1875–1925”

Short-Term Fellows

1. Andrew Butrica (Independent Scholar), Doan Fellow (2 months): “Jean-Baptiste Dumas: Promoter of Chemical Industry”
2. Ari Gross (University of Toronto, Canada), Allington Fellow (3 months): “Structure and Spatiality: Chemical Diagrams and Models and the Birth of Stereochemistry”

3. Lijing Jiang (Arizona State University), Allington Fellow (2 months): “Degeneration in Miniature: History of Cell Death and Aging Research in the Twentieth Century”
4. Victoria Lee (Princeton University), Ullyot Scholar (3 months): “Synthetic Fermentation and Applied Biology in Japan, 1910–1960”
5. Max Liboiron (New York University), Allington Fellow (2 months): “Transforming Pollution: Ocean Plastics and Body Burdens”
6. Catherine Price (Freelance Journalist), Société de Chimie Industrielle Fellow (3 months): “Fortified: The Secret Science of Food”
7. Ann Robinson (University of Massachusetts, Amherst), Herdegen Fellow (1 month): “Creating a Symbol of Science: The Standard Periodic Table of the Elements”
8. Ellan Spero (MIT), Allington Fellow (3 months): “Production and Place, Textile Science and Education in a Technological Landscape”

NEWS FROM THE PROFESSION

2013 DHST Prize for Young Scholars

The International Union of the History and Philosophy of Science, Division of History of Science and Technology (IUHPS/DHST) invites submissions for the third DHST Prize for Young Scholars, to be presented in 2013. Initiated at the 22nd International Congress of History of Science in 2005 held in Beijing, the DHST Prize is awarded by the IUHPS/DHST every four years to up to five young historians of science and technology for outstanding doctoral dissertations, completed within the last four years. The 2013 DHST Prize will not specify distinct categories, but the entries must be on the history of science or technology in any part of the world. The Award Committee will endeavor to maintain the broadest coverage of subjects, areas, and chronology. Each prize consists of a certificate, assistance with travel and accommodation expenditures to the IUHPS/DHST Congress in Manchester in July 2013 and a waiver of the registration fee. The Award Committee comprises the DHST President, Vice-Presidents, Secretary General, and distinguished specialists in specific fields.

Applicants must have a doctoral degree in the history of science, or technology awarded no earlier than July 2008. Any dissertation in a language other than English must be accompanied by a detailed summary in English

of no more than 20 pages. Application procedure: Along with an electronic version (preferably MS Word) of original dissertations (and English summaries for non-English language papers), applications must be made in the Application Form and received at the Award Committee Office no later than 31 August 2012.

To receive the application form, please contact youngscholars@ihns.ac.cn; Institute for History of Natural Science, Chinese Academy of Sciences, 55 Zhong Guan Cun East Road, Beijing 100190, CHINA

WHO Framework Convention on Tobacco Control

The World Health Organization (WHO)'s Framework Convention on Tobacco Control (FCTC) is the first global convention on public health. Comprehensive tobacco control had been the subject of 20 resolutions—consensus statements of all the member states—passed by the World Health Assembly beginning in 1970. This was 20 years after Sir Richard Doll and Sir Austin Bradford Hill suggested a link between smoking and cancer. The idea of a legally binding international convention, proposed by the late Dr. Ruth Roemer and supported by a report from Dr. Judith Mackay, was given priority by the new WHO Director-General Dr. Gro Brundtland in

1998 when she elevated tobacco control as one of WHO's three flagship programs and created the Tobacco Free Initiative. The idea took wing with the publication of a review of tobacco company strategies to undermine tobacco control activities at WHO, which drew on 13 million documents released by the US courts to the public in 1998. This Witness Seminar, held in Geneva on the fifth anniversary of the WHO FCTC in 2010, heard from key individuals actively involved with the treaty negotiations, held between 2000 and 2003, and which came into force on 27 February 2005.

Participants include: Dr. Najeeb Al-Shorbaji, Dr. Mary Assunta, Dr. Douglas Bettcher, Dr. Sanjoy Bhattacharya (co-moderator), Mr. Neil Collishaw, Dr. Vera Luiza da Costa e Silva, Mr. Rob Cunningham, Dr. Martina Pötschke-Langer, Dr. Judith Mackay, Dr. Faith McLellan (co-moderator), Ms Kathy Mulvey, Dr. Haik Nikogosian, Dr. Ahmed Ezra Ogwell, Professor Tilli Tansey and the introduction is by Professor Virginia Berridge.

Further Information:

http://www.history.qmul.ac.uk/research/modbiomed/wellcome_witnesses/vol43/index.html

NEWS FROM THE PROFESSION

The University of Chicago Press Announces New Journals Division Director

After a nationwide search, the University of Chicago Press has announced that Michael Magoulias is the new Director of the Journals Division (the University of Chicago Press publishes *Isis* and *Osiris*). A 22-year publishing veteran, Magoulias was most recently Publishing Director for *The Lancet* journal portfolio. He began oversight of the Journals Division in late April.

“Michael has exactly the skills and experience we need to maintain the highest standard of quality in our journals roster, and to increase the reach and impact of the vital scholarship we publish,” said Garrett Kiely, Director of the University of Chicago Press. “The ground is constantly shifting in the world of journals publishing, and Michael is the kind of proven leader and innovator we were looking for to carry the division forward.”

Before his work at *The Lancet*, Magoulias was Vice-President for Sales and Business Development at Elsevier’s FDC Reports division. His career also includes positions at Gale/Cengage, where he was a series editor for electronic editions of Shakespeare, Chadwyck-Healey in the U.K., and **Britannica.com**. He holds bachelor’s and master’s degrees in history from Oxford University.

“I am honored to be part of an organization with such a rich history of publishing the finest scholarship,” Magoulias said. “I look forward to working with the staff at the Press to continue to disseminate important and impactful scholarship all over the world.”

Journals publishing at the University of Chicago Press began with the founding of the Press in 1891 and its first scholarly periodical, the *Journal of Political Economy*. The division quickly expanded to publish several journals that were the first publications to serve their respective fields, including the *American Journal of Sociology*. Today, the Press publishes 54 respected journals and annuals, including recent additions such as *The China Journal*, *American Political Thought*, and the *Journal of Law and Courts*.

Magoulias succeeds Everett Conner, who worked at the Press for 26 years and had led the Journals Division since 2008, before stepping down earlier this year.

Voyage to the Islands: Hans Sloane, Slavery and Scientific Travel in the Caribbean

This exhibition (through August 2012) uses the collections of the John Carter Brown Library to explore the relationship between early modern scientific knowledge, the Atlantic slave trade and the African diaspora in the Caribbean islands. While historians have long stressed the

importance of travel in the making of early modern natural history, the relation between the natural sciences and European interactions with Africans through the slave trade has only recently received attention. Examining the intersection of science and slavery allows us to see how Africans in diaspora both contributed to European sciences and maintained their own knowledge traditions in opposition to them.

Further Information: http://www.brown.edu/Facilities/John_Carter_Brown_Library/sloane/index.html

http://www.brown.edu/Facilities/John_Carter_Brown_Library/images/sloane.pdf

Jean Jacques Rousseau as Botanist Exhibit Opening in Geneva, Switzerland

An open air, bilingual French-English exhibit on Jean Jacques Rousseau as botanist opened 25 May 2012 at the Conservatory and Botanical Garden of Geneva, Switzerland. It runs until 14 October 2012.

The exhibition is guest-curated by Alexandra Cook of the Department of Philosophy, University of Hong Kong. This is one of many exhibits and events associated with the tercentenary of the birth of Jean-Jacques Rousseau in Geneva 1712. Further Information: http://www.ville-ge.ch/cjb/rousseau_intro_en.php

NEWS FROM THE PROFESSION

The Launch of the New Website for the University of Minnesota's Academic Health Center Oral History Project

The University of Minnesota's Academic Health Center (AHC) Oral History Project preserves the personal stories of key individuals who were involved with the formation of the university's AHC, served in leadership roles, or have specific insights into the institution's history. By bringing together a representative group of figures in the history of the University of Minnesota's AHC, this project provides compelling documentation of recent developments in the history of American health care education, practice, and policy.

From the website you can access the transcripts of thirty-five oral history interviews with current and former faculty members, alumni, and staff of the University's Medical School, School of Nursing, School of Public Health, College of Dentistry, College of Pharmacy, College of Veterinary Medicine, and University Hospitals and Clinics. Additional transcripts will be added as more interviews are completed. From the website, you can also access descriptive and timeline information for the University's AHC and its constituent schools, as well as resources for using oral history in your own research and teaching. Visit the website at <http://blog.lib.umn.edu/ahc-ohp/ahc-oral-history-project/>.

NSF Releases Data on Proposal Reviews

In an annual report to the National Science Board released in May 2012, the National Science Foundation (NSF) provided data and other information relative to its merit review process for FY 2011.

In that fiscal year, NSF received a total of 51,562 proposals. This is a decrease of about seven percent from the number of proposals received in FY 2010, but an increase of over 61 percent from the number received in FY 2001. The Foundation made 11,192 awards in 2011, resulting in a 22% funding rate. The average funding rate varies by NSF directorate and there is an even greater variation of funding rate by program.

In FY 2011, the Social, Behavioral and Economic Sciences directorate received 5,112 proposals, up from 4,619 in FY 2004. It made 998 awards for a funding rate of around 20 percent. The number of awards decreased significantly from FY 2010 and FY 2009 when stimulus funding provided additional dollars to make 1,257 awards in FY 2010 and 1,337 awards in FY 2009.

The Education and Human Resources directorate received 4,660 proposals in FY 2011 comparable to the 4,644 in FY 2004. The awards totaled 807 in FY 2011 and 925 in FY 2004. Funding rates were 17 percent in FY 2011 and 20 percent in FY 2004.

According to the report, NSF exceeded its "time to decision" goal of informing at least 70% of Principal Investigators (PIs) of funding decisions within six months of receipt of their proposals. In FY 2011 78% of all proposals were processed within six months.

The report also notes that NSF externally reviewed proposals by three methods: panel only, mail plus panel, and mail only. In FY 2011, 62 percent were reviewed by panel only, 28 percent by mail plus panel, and seven percent by mail only. These percentages have remained fairly constant over the last several years. In addition, about three percent of proposals are not reviewed externally (these include, for example, proposals for travel, symposia, Early Concept Grants for Exploratory Research, and Grants for Rapid Response Research).

The average NSF grant was \$159,000 in FY 2001; up from \$136,000 in FY 2003, but a five percent drop from FY 2010. In SBE, the average grant climbed from \$89,000 in FY 2003 to \$113,000 in FY 2011.

For more data on NSF's grant making go to: <http://www.nsf.gov/nsb/publications/2012/nsb1228.pdf>.

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NEWS FROM THE PROFESSION

David Grinspoon Named the First Chair in Astrobiology at John W. Kluge Center, at the U.S. Library of Congress

Librarian of Congress James H. Billington has named David H. Grinspoon the first Baruch S. Blumberg NASA/Library of Congress Chair in Astrobiology in the John W. Kluge Center at the Library of Congress. The chair is a joint project between the NASA Astrobiology Institute and the Kluge Center. Grinspoon is the curator of astrobiology in the Department of Space Sciences at the Denver Museum of Nature & Science. He is a well-known researcher in planetary science and the author of *Lonely Planets: The Natural Philosophy of Alien Life*.

Astrobiology is the study of the origins, evolution, distribution and future of life in the universe. It addresses three fundamental questions: How did life begin and evolve? Is there life elsewhere? What is the future of life on Earth and beyond? As the chair, Grinspoon will conduct research at the intersection of the science of astrobiology and its humanistic aspects, particularly its societal implications.

This new chair at the Kluge Center is the result of collaboration between NASA and the Library of Congress and is named for Baruch “Barry” Blumberg, the late Kluge Center Scholars Council member, Nobel Laureate and founding director

of the NASA Astrobiology Institute. Librarian of Congress James H. Billington said, “It brings me great pleasure to bring to fruition Barry Blumberg’s vision of two great institutions working together to explore the societal implications of this emerging new interdisciplinary field of study and to make use of the Library of Congress’ unique multidisciplinary collections.”

NASA Astrobiology Institute Director Carl Pilcher said, “Grinspoon will conduct a very exciting investigation of how the insights and scientific culture of astrobiology can inform the choices facing humanity in the coming decades. His background as an astrobiology researcher, writer and communicator of science makes him an ideal choice to begin what we hope will become a great tradition of astrobiology chairs at the Library.”

While at the Kluge Center, from November 2012 through November 2013, Grinspoon will examine choices facing humanity as we enter the Anthropocene Era, the epoch when human activities are becoming a defining characteristic of the physical nature and functioning of Earth. His research will include studies of the role of planetary exploration in fostering scientific and public understanding of climate change and the power of astrobiology as a model of interdisciplinary research and communication.

Blumberg was awarded the 1976 Nobel Prize in Physiology or Medicine for discovery of the Hepatitis B virus and development of a vaccine to prevent Hepatitis B infection. He served as

NASA Astrobiology Institute director from 1999 to 2002. He was elected president of the American Philosophical Society in 2005. At the Library of Congress, Blumberg was a founding member of the Scholars Council, distinguished scholars who advise the Librarian of Congress on matters of scholarship.

Through a generous endowment from John W. Kluge, the Library of Congress established the Kluge Center in 2000 to bring together the world’s best thinkers to stimulate and energize one another, to distill wisdom from the Library’s rich resources, and to interact with policymakers in Washington.

Further Information: www.loc.gov/kluge/

The Latest List of Dissertations on History of Medicine and Science

The latest list of recent doctoral dissertations harvested from the August 2010 issues of Dissertation Abstracts pertaining to the history of medicine and science can be viewed at <http://www.hsls.pitt.edu/histmed/dissertations/>.

This list is created directly from the hard copies of Dissertation Abstracts on a bimonthly basis and is intended for interested scholars world-wide.

NEWS FROM THE PROFESSION

New Online RCPE Archive Catalogue Reveals Historical Medical Treasures

The RCPE Sibbald Library and Archive has tens of thousands of manuscripts and letters within its collections which it has previously not had the resources to catalogue. As a result of a recent ongoing project, funded by the Wellcome Trust Research Resources Scheme over 8,000 items have been catalogued in order to open up access to this material. The majority of the collections consist of lecture notes and research by some of the most eminent doctors of their day. These demonstrate developments in medical theory and practice from 1700 onwards, in one of the most important centers for medical education in the world. Some fascinating items discovered during this work include a draft post mortem report on Napoleon Bonaparte (written on St. Helena on the day he died), correspondence with the Marquis de Lafayette and notes regarding the conduct of Dr. Robert Knox (of Burke and Hare notoriety).

Further Information: <http://www.rcpe.ac.uk/library/find/index.php>

New reviews posted on *Dissertation Reviews*

New reviews posted on *Dissertation Reviews* (Science Studies and Medical Anthropology):

- Boris Jardine, “Scientific Moderns,” reviewed by Melinda Baldwin
- Raul Necochea Lopez, “A History of the Medical Control of Fertility in Peru, 1895–1976,” reviewed by Jason Glenn
- Brendan Clarke, “Causality in Medicine with Particular Reference to the Viral Causation of Cancers,” reviewed by Raffaella Campaner
- Andrew Mamo, “Post-Industrial Engineering: Computer Science and the Organization of White-Collar Work, 1945–1975,” reviewed by Shreeharsh Kelkar
- Daniel Rood, “Plantation Technocrats: A Social History of Knowledge in the Slaveholding Atlantic World,” reviewed by David Singerman
- Jeffrey Skopek, “Shaping Science with the Past: Textbooks, History, and the Disciplining of Genetics,” reviewed by Joy Rankin
- Jennifer Tappan, “‘A Healthy Child Comes from a Healthy Mother’: Mwanamugimu and Nutritional Science in Uganda, 1935–1973,” by Ruth Prince
- Emily Winterburn, “The Herschels: A Scientific Family in Training,” by Barbara Becker

Please visit the website at www.dissertationreviews.org. To contribute a review or to have your dissertation reviewed, please e-mail dissertationreviews@gmail.com.

Call for Book Manuscript Authors and Editors

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Prospective authors will find contact information and proposal guidelines at the AMS web site, http://www.ametsoc.org/pubs/books_monographs/book_guidelines.pdf or may contact directly the managing editor, Sarah Jane Shangraw, sjshangraw@ametsoc.org or the historical editor, Jim Fleming, jfleming@colby.edu.

NEWS FROM THE PROFESSION

Science and Society Picture Library

For those interested in using images from the Science and Society picture library in their academic talks and lectures, please feel free to get in touch with Selina Pang, Collections Coordinator at the Science Museum, who can provide larger images without the watermark. Her e-mail address is Selina.Pang@sciencemuseum.org.uk. These images are available as long as the Science Museum is aware of the use and they are not used commercially. The Science Museum fully supports individuals and academic institutions sharing their research in science, technology, engineering and medicine.

Further Information:

<http://www.scienceandsociety.co.uk/>

Announcement of 2012 Winner: The James T. Cushing Memorial Prize in History and Philosophy of Physics

The John J. Reilly Center for Science, Technology, and Values, along with the Graduate Program in History and Philosophy of Science at the University of Notre Dame and the Advisory Committee of the James T. Cushing Memorial

Prize in History and Philosophy of Physics are pleased to announce the awarding of the Cushing Prize for 2012 to Dr. Hilary Greaves, University of Oxford. She is being honored for her paper, "Towards a Geometrical Understanding of the CPT Theorem," published in *The British Journal for the Philosophy of Science* in 2010. The Cushing Prize carries a \$1000 award plus an invitation to deliver a lecture as part of the History and Philosophy of Science Colloquium at the University of Notre Dame.

Hilary summarizes her argument in the abstract of her paper: "The CPT theorem of quantum field theory states that any relativistic (Lorentz-invariant) quantum field theory must also be invariant under CPT, the composition of charge conjugation [C], parity reversal [P] and time reversal [T]. This paper sketches a puzzle that seems to arise when one puts the existence of this sort of theorem alongside a standard way of thinking about symmetries, according to which spacetime symmetries (at any rate) are associated with features of the spacetime structure.... The paper then suggests a solution to the puzzle: it is suggested that the CPT theorem arises because temporal orientation is unlike other pieces of spacetime structure, in that one cannot represent it by a tensor field."

Hilary was nominated for the Cushing Prize by David John Baker (winner of the Cushing Prize for 2010), who describes the importance of Greaves' paper: "The 'CPT Theorem'

paper constitutes a major step forward in the conceptual understanding of this foundationally important but ill-understood result in mathematical physics. The deep puzzle Greaves attempts to tackle is why (as the theorem establishes) Lorentz invariant quantum field theories must also be invariant under the combination of three discrete symmetry transformations: charge conjugation (the interchange of positive and negative charge), parity inversion (aka mirror reflection) and time reversal.... She resolves the puzzle by showing that our use of tensors to represent fields in Minkowski spacetime is the true source of CPT, because it is impossible for a Minkowski-space tensor to represent a temporal orientation." Baker lauds her overall contribution to philosophy of physics in these terms: "Greaves has been publishing first-class research in the philosophy of physics since her first year of graduate school.... It is no exaggeration to say that she is probably the most exciting researcher to earn a doctorate in the philosophy of physics within the last five years."

Hilary Greaves is Lecturer in Philosophy, Somerville College, University of Oxford. She was previously a Research Fellow in Philosophy, Merton College, Oxford, and received her PhD in Philosophy from Rutgers University (2008).

NEWS FROM THE PROFESSION

Advanced Degrees at the Editorial Institute at Boston University

The Editorial Institute at Boston University offers advanced degrees (MA and PhD) to select students who successfully prepare either editions of important writings with textual apparatus and annotations or monographs concerned with editing and textual bibliography in all disciplines, the humanities, arts, and sciences. The Institute was formed with the conviction that the textually sound, contextually annotated edition is central to the life of all disciplines. It primarily aims to promote critical awareness of editorial issues and practices and to provide training in editorial methods. The Institute is also the site of noted editorial projects, including T. S. Eliot, Sir James Fitzjames Stephen, and *The Wordsworth Circle*. Financial assistance and salaried appointments are available. For more information about the program, the faculty, and application, see <http://www.bu.edu/editinst> or e-mail to kaevans@bu.edu.

Arizona State University's Visiting Graduate Training Program

Arizona State University's visiting graduate student training program is now accepting applications for its January 2013 session. We will select a cohort of visiting graduate students to join our project for writing, editing, and digital humanities training as part of the Embryo Project, our large NSF-funded digital humanities initiative. For this training program you need not specialize in history of embryology, but in any area of history of life sciences with a willingness to find points of contact and to learn.

Visitors must be graduate students in good standing at another university (domestic or international), with funding that covers your salary and health insurance. ASU will make you a visiting scholar and provide for local housing and transportation. Students should be in residence for 8 weeks, from mid January to mid March, and may request to stay the entire semester. Office space will make it easy for students to join the dynamic group of historians and philosophers of science at the Center for Biology and Society at ASU. In addition, all participants are welcome to join the History of Biology Seminar at the Marine Biological Laboratory in Woods Hole, which we hold annually as part of the new ASU-MBL HPS Program (though the seminar has been taking place for over 25 years).

Overall, the Embryo Project (EP) engages and connects researchers who aim to capture and investigate the history, science, and contexts of embryology and reproductive medicine in new ways. The EP combines scholarly research with the emerging field of digital humanities and the science of informatics. The primary result is the Embryo Project Encyclopedia, an online Open Access repository that grows weekly. The repository stores encyclopedia entries and interpretive essays, plus pictures, videos, timelines, and other types of objects related to the history of embryology. Remember, participants need not specialize in history of embryology, but just have a relevant interest that will make this focus appealing. This project is part of a cluster that also includes a focus on biodiversity, and we also welcome students interested in that area.

To express interest or for more information, please contact: Jane Maienschein (maienschein@asu.edu) or Nathan Crowe (nathan.crowe@asu.edu).

PAST CONFERENCES

Regional Links Promoted at “Facts, Artifacts, and the Politics of Consensus”

By Adam Plaiss (Northwestern University)

Recognizing the innovative work of STS scholars in Midwestern institutions, Northwestern University’s Science in Human Culture program hosted “Facts, Artifacts, and the Politics of Consensus: A Midwest Conference for Science and Technology Studies,” on May 4 and 5, in Evanston, Illinois. Regional ties were made and strengthened as the conference drew more than 100 attendees and panelists from more than a dozen colleges and universities across the Midwest.

Naomi Oreskes (California-San Diego) commenced the conference’s investigation into the politics of consensus in her keynote address on Friday evening. Her address, entitled “Merchants of Doubt,” was largely based on her 2010 book of the same title (co-authored with Erik M. Conway), which received the HSS’s 2011 Watson Davis and Helen Miles Davis award for the best history of science written for the public at large. Professor Oreskes argued that the seeming scientific controversy surrounding the issue of climate change is in fact the product of a small but determined cadre of professional consensus-questioners. These “merchants of doubt” have, since the late 1970s, received industry funding to produce scientific reports

that contradict the prevailing academic opinions regarding environmental hazards such as cigarette smoke, carbon-gas emissions, and acid rain. Such reports give the illusion of disagreement among scientists to outside journalists.

The conference’s four panels met on Saturday and continued to examine the complications surrounding consensus-building among the scientific community and between scientists and society in general. The first panel, entitled “Transnational Negotiations,” investigated how national boundaries influence scientific consensus concerning the veracity of fact. For example, Gabrielle Hecht (University of Michigan) argued that when regulatory agencies ascribe the status of “nuclear” to uranium mines, power plants, and technological processes, they do so in political environments that vary by nation, thus making ostensibly scientific judgments beholden to considerations of race and class particular to national settings. Issues of race and national cultures were also discussed by Joan Fujimura (University of Wisconsin-Madison), who outlined the technical and conceptual complexities faced by a number of geneticists across the globe as they attempt to correlate genetic differences among present-day humans with the geographic distance that supposedly separated their remote ancestors. Lastly, Tom Waidzunus (Northwestern University) showed the importance of national context in the creation of expertise by comparing the policy statements



From left to right: Fay Cook, Director of Northwestern’s Institute for Policy Research; Naomi Oreskes, University of California, San Diego; Stephen Epstein, Director of the Science in Human Culture Program and of the interdisciplinary graduate cluster in Science Studies at Northwestern. Photo by Héctor Carrillo.

on homosexuality issued by social workers in Uganda to Western social workers’ professional consensus on the issue. Internationally accredited Ugandan social work agencies hold position statements on human behavior that are, unlike Western statements, explicitly informed by Judeo-Christian Scripture.

The second panel, “Nature of Expertise,” explored the role the state plays in creating societal consensus over what counts as scientific authority. Christopher Hamlin (University of Notre Dame) opened the panel with a study of “experts and anarchists in Victorian sanitation” and found that

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English towns at times successfully integrated democratic decision making into the oversight of large, state-owned infrastructural systems. The role of democratic ideals was also considered by Shobita Parthasarathy (University of Michigan), who compared the patenting of living entities in the United States and Europe. The connection between science and the law was further studied by Rachel Ponce (University of Chicago), who examined expert testimony given at a curious nineteenth-century murder trial and contended that at times practitioners such as psychologists construct their authority so as to supplement, and not replace, folk wisdom.

After lunch and a presentation on funding by the National Science Foundation's STS Program Director Kelly Moore, the third panel, "Sensing the Unseen," convened. This panel probed the sometimes unstable consensus among scientists regarding the reliability of the senses. Lorraine Daston (University of Chicago) recounted the attempts of early modern European botanists to categorize plants by taste, which led them to trust their own senses in ways that subsequent generations of scientists found troubling. Not all modern scientists distrust their sense of taste, however, as Fiona Rose-Greenland (University of Michigan) demonstrated in her study of Italian archeologists. These experts acquire knowledge by touching, smelling, and even tasting the dirt itself; archeologists with good "dirt sense" are highly revered by

their peers. But as Tania Munz (Northwestern University) observed, aside from archeologists, most twentieth-century scientists regarded the human senses to be unreliable, as evidenced in her analysis of the twentieth-century honeybee biologist Karl von Frisch. Frisch's explanation of how honeybees locate their food—that scout bees use a dance language to communicate the food's whereabouts—survived the attack of a simpler, rival theory which posited that bees merely smell their way to their food. Experiments set up to verify the smell hypothesis, however, required scientists to rely on their own sense of smell, a situation considered too unscientific even by the researchers conducting the work.

The fourth and final panel, "Ecologies of (In) Security" considered the limits of experts' power once consensus has been achieved. At times, consensus regarding the need for surveillance can mobilize massive national security projects, as Paul Edwards (University of Michigan) demonstrated in his review of the formerly top secret Project Grab Bag, which utilized high-altitude balloons to detect radioactive particles released by nuclear weapons tests. Other times, even the most widely held fears fail to motivate action, as Susan Lederer (University of Wisconsin-Madison) showed. Professor Lederer examined the federal government's contingency plans to manage the casualties of a nuclear attack, and proved post-World War III civil

defense protocols to be almost as frightening as the dreaded war itself. Finally, Alex Blanchette (University of Chicago) illustrated how expert consensus can exacerbate class differences. His presentation on factory farms in the American South Plains described how diseases endemic in feed-lot swine necessitate strict control over the behavior of the humans who work with them.

The Science in Human Culture program, which hosted the conference, gathers scholars from across Northwestern University to consider the role of science, technology, and medicine in societies, past and present (<http://www.shc.northwestern.edu>). The SHC program organizes the Klopsteg Lecture Series, inviting scholars from throughout North America to share their research in a supportive and enthusiastic environment. Northwestern undergraduates can pursue a minor or an adjunct major through the SHC program, and the program also provides graduate fellows from a variety of departments with a colloquium in which to share and improve their work. For more information, please contact Professor Steve Epstein, program director, at s-epstein@northwestern.edu.

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Lone Star Historians of Science

By Bruce Hunt (University of Texas, Austin)

Continuing a tradition that has now been running far longer than its founders would have ever imagined, the Lone Star History of Science Group held its twenty-fifth annual meeting on 6 April 2012 at Rice University in Houston. The gathering was hosted by Cyrus Mody of Rice and Jimmy Schafer of the University of Houston.

The speaker this year was Professor Martin Melosi of the University of Houston. A distinguished environmental historian, Melosi also researches and teaches on the history of nuclear energy and nuclear weapons, and has just completed a new book, *Atomic Age America* (Pearson, 2012). For the Lone Star group, he spoke on “Democracy of Science No More: The Untimely Discovery of Nuclear Fission in the 1930s,” emphasizing

how the discovery of fission came at an especially unfortunate time in global affairs and ushered in deep changes in the scientific community.

After a lively discussion, the group headed off to enjoy dinner, drinks, and further conversation at a local Italian restaurant.

Each spring, the Lone Star Group draws together historians of science, technology, and medicine from around Texas to discuss their shared interests and enjoy a friendly dinner. Its constitution, adopted at an Austin restaurant in 1988, provides that there shall be “no officers, no by-laws, and no dues,” and the group remains resolutely informal. The next Lone Star meeting will be hosted by Bruce Hunt at the University of Texas in Austin in March or April 2013. Anyone wishing to be added to the group’s mailing list should contact him at bjhunt@mail.utexas.edu.



Left to right: Kevin Stewart, Martin Melosi, Nathan Ensmenger, Karl Stephan, Ioanna Semendeferi, John Zammito, Anthony Stranges, Jimmy Schafer, Steve Kirkpatrick, Derek Polston, Bruce Hunt, Stephanie Vajda, Jennifer Bazar, Erik Norquest, Cyrus Mody, Tom Williams, and Anna Fay Williams.

The Public History of Science and Technology

By Allison Marsh and Sarah Scripps

In September 2011, the University of South Carolina hosted a conference to address the interaction of history, science, and the public. This conference raised questions, such as: What role does history play in the general public’s understanding of science and technology? What is the role of museums, libraries, television, and popular writing in educating audiences about science? How can historians of science and technology best interact with science policy makers? And what can university history departments and public history programs do to teach future science popularizers and educators?

Funded by NSF Grant #SES-0531160, this conference expanded upon current research at the University of South Carolina aimed at increasing public understanding of scientific change and emerging technologies. Presenters represented numerous museums, universities, and agencies from across the United States and the world. The panelists covered a host of issues concerning science in the public sphere, including oral history, science and the media, science policy, pedagogy, and material culture (<http://www.cas.sc.edu/hist/conf/phst/index.html>).

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The opening plenary by Katherine Pandora and Erika Milam set a lively tone for the conference by examining how children experienced the history of science during the postwar period. In evaluating Disney's *Our Friend the Atom* and National Geographic's *Miss Goodall and the Wild Chimpanzees*, Pandora demonstrated how television science documentaries communicated scientific authority and the ways in which this media positioned children in the larger polity of science. Milam evaluated how debates over the moral and political content of science emerged in early education discussions through her analysis of the social studies curriculum project Man: A Course of Study (MACOS). Their talks introduced themes that recurred in subsequent panels: What counts as science, and who has the authority to participate? How can the history of science help better inform us of the range of public engagement in the scientific enterprise?

Several presenters emphasized the role of objects in telling new and engaging stories about the history of science and technology. Joseph N. Tatarewicz at the University of Maryland, Baltimore County argued that even science “junk”—such as hand-made apparatus or beat-up equipment—could reveal the common, everyday realities of scientific practice. Conversely, Suzanne Fischer at The Henry Ford museum highlighted the centrality of aesthetics in her description of a growing

trend occurring both in museums and on the web: the reemergence of cabinets of curiosity. This eclectic mode of display values the beauty and wonder contained within objects themselves. The presentations emphasized how material culture could convey multiple meanings and tell a fuller story of science and technology.

Robert Bud of the Science Museum in London, Peter Liebhold of the National Museum of American History, and Sharon Babaian at the Canada Science and Technology Museum described the challenges that national museums face in dealing with appointed boards, shifting political priorities, and past institutional mandates. In Babaian's experience, history often takes a backseat to basic science education, and where it is included, it often presents an uncomplicated, positivist account of nationalist achievements. This approach does not make for an accurate or interesting story, and yet it is often the only one told at national institutions. Robert Bud identified the issue more concisely by asking, in the case of science museums, “Is history bunk?” Bud, Babaian, and Liebhold all pointed to a similar solution. Rather than separating science and technology as independent from the public sphere, museums could demonstrate how science is fundamentally shaped by culture. This approach allows the public not only to understand important historical complexities,

but it also invites them to play important roles as actors (or adversaries) in how science and technology is conceived. As Bud suggested, perhaps the issue is not that historians do not know how to engage people's beliefs and doubts about science, but that it might be rather frightening to hear what they have to say.

Plenary speaker Zuoyue Wang from California State University-Pomona advocated for more consideration of policy as a valid part of the public history field. Wang reminded us that policy makers prefer clarity over nuance, and historians should acquire a familiarity with the fast-paced, staged nature of the political process before entering the policy arena. Wang contended that historians need to be comfortable taking a stand promoting science and defending it against political attacks. Historians generally aim at keeping at a critical stance from their subject matter, highlighting complex shades of grey than firm black and white positions. Wang argued that in the public arena, however, such an approach would not engage policymakers.

Wang cited climate change as one area where historians need to take a firm position in favor of science. However, professionals at the Chemical Heritage Foundation (CHF) approached this issue from the opposite standpoint. Christy Schneider and Elizabeth McDonnell outlined a planned exhibit at

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CHF titled *Making Climate Change Real: Artists Respond*. The exhibit aims to use artists' renderings of climate change to provoke debates among visitors. Their presentation sparked one of the most heated discussions of the conference. Many participants questioned the legitimacy of CHF in addressing these issues because they are sponsored heavily by the chemical industry. To what extent do historians and the public consider them to be honest brokers? The large contingent from CHF countered that institutions can and should show transparency in their work.

In the closing roundtable organized by Allison Marsh, participants discussed the future of museum practices for the public history of science. The roundtable provoked debate about training future professionals for careers in the public history of science and technology. Do they need technical content (training in STEM), as Michael Geselowitz of IEEE argued, or do they need training in contextualization and public outreach, as representatives from CHF argued?

The conference illustrated many of the challenges historians face in conveying science and technology to the general public. Throughout the conference, participants called for a clearly articulated, but more nuanced approach to science and technology. They wanted to move beyond the "science center mentality" that lacks historical context and

to avoid positivist accounts that celebrate a simplistic march towards progress. A history-based approach provides greater sensitivity to the pluralism of science, situates artifacts as bearers of interesting stories, and shows how science and technology should be situated within a greater cultural context.

Interested in learning more about the public history of science and technology? Join the Technology Museums Special Interest Group (TEMSIG) meetings at the National Council on Public History and Society for the History of Technology annual conferences. Contact Eric Nystrom (eric.nystrom@rit.edu) to be added to the listserv. Working in the field? Contact conference organizers Ann Johnson (ajohnson@mailbox.sc.edu) and Allison Marsh (marsha@mailbox.sc.edu) about a potential book project on the subject.

Ann Harrington Delivers the 4th Hazen Lecture

Ann Harrington (Harvard University) gave the History of Science Society's Joseph H. Hazen Lecture at the New York Academy of Science this past May. In her talk, "Bodies Behaving Badly: Insights from the History of Mind-Body Medicine and Why They Matter," she explored the general assumption in the academy that, while human cultures vary in different times and places, the human body always works the same, in all times and places. Professor Harrington drew on material from the history of mind-body medicine to challenge this assumption. Especially in situations of illness, there is evidence that human bodily experience is shaped by culture and, in this sense, has a history that needs to be told, alongside the histories of changing medical and folk theories.

The Joseph H. Hazen Lecture is made possible by a gift from Cynthia Hazen Polsky, daughter of Joseph Hazen. The lecture is supported by the History of Science Society; Metropolitan New York Section of the HSS; New York University's Gallatin School of Individualized Study; Columbia University's Colloquium for Science, Technology, Medicine and Society and University Seminar in History and Philosophy of Science; City University of New York's PhD Program in History, and History of Science Lecture Series; and the New York Academy of Sciences Section for History and Philosophy of Science and Technology.

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The Humanities in Science, Engineering, and Medicine: A Conference Welcoming the History of Science Society to the University of Notre Dame

On the occasion of the HSS Executive Office relocating to the campus of the University of Notre Dame, scholars from around North America converged on the campus this past June to examine how those in the humanities, in the sciences, in engineering, and in medicine can engage in fruitful dialogue. The conference began with talks by four HSS officers: Lynn K. Nyhart, President of the HSS, spoke on “Alternation of Generations as a Model for Evolution,” Bernie Lightman, Society Editor, provided insights on “Science and Religion at the Metaphysical Society: Contesting Knowledge in the 1870s,” Marsha Richmond, HSS Secretary, delivered a paper “What’s Gender Got to Do with It? Women and Biological Laboratories and Research Institutes after 1900,” and Angela Creager, HSS Vice President, focused on “Life Atomic: Radioisotopes as Tools in Biology

and Medicine.” These fascinating talks were followed by two panels. The first panel featured representatives from various Notre Dame units, as well as an officer of the American Council of Learned Societies. Each scholar spoke to the need for those in the humanities and those in the sciences and engineering to deepen their dialogue. Panelists included Don Howard, Director, Reilly Center for Science, Technology, and Values, University of Notre Dame; Peter Kilpatrick, Dean of College of Engineering, University of Notre Dame; Dan Myers, Vice President and Associate Provost for Faculty Affairs, University of Notre Dame; Jeffrey W. Peng, Depts. of Chemistry & Biochemistry and Physics, University of Notre Dame; and Steve Wheatley, Vice President, American Council of Learned Societies. This lively exchange was followed by a discussion of humanities in medicine. These panelists included Christopher Hamlin, Department of History, University of Notre Dame; Nicole Archambeau, ACLS New Faculty Fellow, California Institute of Technology; Bridget Gurtler, Research Fellow in History of Science, Princeton University; and Sarah Parker, Department of English and Comparative Literature, University of North



*Jay Malone, Executive Director of the HSS.
Photo by Jessica Baron.*

Carolina. It is hoped that the conference will result in more interchange among all stakeholders. Both panels were recorded so that other colleges and universities can use this model to foster conversations on their own campuses.

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America's Land-Grant University System at 150th: A Group Looks Back

By Alan I. Marcus (*Mississippi State University*)

Mississippi State University, 3–6 October 2012

On 3–6 October 2012, Mississippi State University will hold a gathering of historians to mark the 150th anniversary of the Morrill Land Grant College Act. That Act provided U.S. federal support to establish colleges in each state to extend higher education to the masses. Presently there are over 70 land-grant institutions and every state has at least one. Land grants are among the nation's best known and most prestigious public universities. They include the University of Wisconsin, Texas A & M, Massachusetts Institute of Technology, University of California, Cornell, Kansas State, University of Florida, and, of course, Mississippi State.

The Morrill Act was a comparably simple piece of legislation. It aimed at the children of farmers and mechanics, seeking to “promote the liberal and practical education of the industrial classes in the several pursuits and professions of life.” The act specifically mentioned the kinds of courses these new institutions could offer: scientific and classical studies, military tactics and “teaching branches of learning related to agriculture and the mechanic arts.” But the way that its key objective should be carried out was critical. The act mandated that it should be achieved

in a manner that the state legislatures “may respectively prescribe.”

Placing the power to fulfill the terms of the act in individual state legislatures meant that these new educational entities would develop differentially in time and place. It also made them exquisitely susceptible to political pressure. They were, after all, public institutions established to undertake a public good. Various groups tried to form, shape and even co-opt them, stretching them beyond their initial mission. The new schools needed to be responsive to keep their funding and their faculty. Congress's enactment of the Hatch Act in 1887, which created agricultural experiment stations, added an additional layer of complexity to land grants. States generally joined the new stations to these schools, which formally recognized scientific and technical investigation as a central land-grant function. These several dimensions persist within land grants to the present day. Colleges readily acknowledge shifting balance and focus in response to external forces. They consider flexibility an important factor in achieving their difficult mission. Land-grant universities pride themselves on their history of service to their constituencies and engagement with their communities.

Those are the broad parameters of the land-grant college ethos. These schools have been involved in virtually every major technological, scientific, educational and cultural initiative since their creation. They have worked to help re-engineer American society and life, spawning

innovation, social movements, crass products, hope and discontent. They stand as monuments to the idea of a government-education nexus, a foundation on which government has built access to education among its citizens, advancing the idea that state-supported, educational institutions should be subservient to social goals as they advance these goals.

That is and has been a broad, complicated and often contentious agenda. What that meant, how it was determined, and what were its consequences over the past 150 years are the subjects of this historical conference.

Some forty historians from all over the United States will gather at Mississippi State for what I call a “cerebration” of the legacy of this monumental act. This group will not simply sing the praises of land grants but rather explore their various ramifications and iterations more critically. It will seek to learn about them, why their presidents, boards, directors, and faculties made the choices that they did and to evaluate how those choices turned out.

The conference will be wide-ranging and freewheeling. Some papers will discuss certain aspects of the land-grant experience locked in time and place, while others will trace a particular function of the colleges or field of knowledge over an expanse of time and in many states. Still others will explore aspects of the land grants that no longer persist, seeking to determine how they rose and why they disappeared. Others will

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determine the consequences of various land-grant policies on specific American subpopulations.

This will be a working meeting. Conference participants are expected to discuss papers and approaches with each other with the objective of sharpening arguments and tightening focus. It is anticipated that this interaction among participants will generate certain themes and intellectual structures around which to organize land-grant history.

That last desideratum is crucially important. Two volumes of conference proceedings will emerge from this meeting. Put baldly, this conference aims to establish in one place a good portion of the land-grant experience. Various colleges and universities have their particularistic histories. But there is no broad-based history of the land-grant movement as it has played out over the past 150 years. This is true even in the areas that the land grants have special renown, such as the agricultural sciences and engineering. This meeting will begin to redress that unfortunate omission. It will provide an outline of some of the major lines of action that have constituted the land-grant experience. These volumes will give the conference permanence, solidity. Presentations disappear into the ether. Books are less ephemeral; they can be consulted, cited or criticized over decades or centuries.

The relative lack of scholarship on land-grant, agricultural science and engineering efforts is

as disappointing as it is surprising. Many of these schools have long had departments or specialties in the history of science or the history of technology. Yet few faculty members have chosen to examine land-grant endeavors. Such an omission is troubling. Land-grant universities and their experiment stations have been intimately involved in almost every life science initiative in the three quarters of a century prior to 1950. Computers, fax machines, airplanes, the atomic bomb and most other major technological changes that have marked the past century owe at least part of their existence to land-grant-college work. Social science theories and applications often had their initial moment at these important schools.

The list goes on and on. Land-grant colleges and universities have had a profound influence on American society. They remain an essential part of the intellectual, political, social and economic fabric of what defines America. That critical centrality deserves explication. This conference serves as a beginning of that endeavor.

For more information about the conference, please see its website:

<http://www.history.msstate.edu/MorrillActWebSite/MorrillIndex.html>

Ex Certa Scientia: Literature, Science and the Arts— An International Conference Porto, Portugal, 13–15 December 2012

This conference aims to respond to the intense interest that interdisciplinary and intermedial designs have obtained in many of the areas of study pertaining not only to literature and the arts but also to the sciences. It will lay a significant emphasis on the ways in which the discourses of literature, film, painting, music and other such cultural practices become interwoven with the discourses of science; and, conversely, on the ways in which the practices and theories of science reach beyond their more conventional boundaries and into the fields of artistic creativity and the humanities. The conference is meant to commemorate the 350th anniversary of a major event in the history of science and scientific institutions: the granting of the Charter to the Royal Society of London by King Charles II in 1662. The range of the conference, however, will be considerably broader: the program will accommodate participants with interests as diverse as literary studies, the arts, the language of art history and art criticism, writing and performance, the philosophy of science, and the history of scientific inquiry and scientific institutions.

As indicated by the number in its title, this conference is the second in a series of academic

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events that reflect the ongoing concerns of the eponymous research group (Relational Forms), based at CETAPS (the Centre for English, Translation and Anglo-Portuguese Studies). Registration details will be posted online in **September 2012**. All delegates are responsible for their own travel arrangements and accommodation. Relevant information will be provided later on the conference website—<http://web.letras.up.pt/scientia>.

The conference is organized by the Relational Forms research group (<http://www.cetaps.com/>). For further queries please contact relational@letras.up.pt.

CFP: Second World Congress on Environmental History Guimarães, Portugal, 7–14 July 2014

Environmental history at an international scale and with global reach burst into the scholarly world with the first World Congress of Environmental History held in 2009 at the Universities of Roskilde and Malmö, Denmark. The Congress attracted hundreds of delegates. Based on the success of the conference the International Consortium of Environmental History Organizations (ICEHO) has been formally established and membership is growing. (See <http://www.iceho.org>)

Planning for the Second World Congress of Environmental History is now well advanced. The theme of the Congress, “Environmental History in the Making,” aims to create synergy among all scholars engaged in environmental history, to fathom the reach of the field and to investigate its focus areas and theoretical underpinnings. In line with the aims of ICEHO, the broad objective is to foster international communication and collaboration, to share information and disseminate research and to discuss issues, concerns and challenges relevant to the field. Thus, for the second time environmental historians from all over the world—senior academics and young scholars—with different disciplinary backgrounds will meet in a global forum to further the development of environmental history world-wide. Proposals may address any area of environmental history. The Program Committee specifically solicits submissions of new and original work that offers fresh perspectives for environmental history as well as exploring sources and methods. The conference covers all periods of human history and we welcome scholars from a range of disciplines. The conference language is English. The Congress will be arranged around panels of 3 or 4 original papers. Individual papers will be accepted, but are more difficult to place in panels. Roundtables will be organized for postgraduate

researchers to submit work in progress. There will also be poster sessions. In order to be accepted for the program, you will need to reconfirm your participation and register for the conference. Abstracts will be submitted online. Notification will be by e-mail. Review Process: All panels, papers, or posters will be reviewed by the Program Committee in an anonymous process to ensure the highest scholarly standards. Each paper will be reviewed independently by at least three members of the Program Committee.

The Conference will be held in Guimarães, Portugal, 7 to 14 July 2014. The deadline for the Call for Papers is **30 May 2013**. Further Information: <http://www.wceh2014.org>; <http://www.wceh2014.ecum.uminho.pt/Default.aspx?tabid=1&pageid=35&lang=en-US>

**Join the
HSS and PSA
Joint Conference**

**San Diego, CA
15-18 November 2012**

**Registration will open
in August.**

MEMBER NEWS

AAAS For a list of the newest fellows for the American Association for the Advancement of Science, please see Mark Largent's report on Section L for AAAS.

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Nima Bassiri (Duke University) was awarded an ACLS New Faculty Fellowship (2012–2013) for the project *Dislocations of the Brain: Subjectivity and Cerebral Topology from Descartes to Nineteenth-Century Neuroscience*.

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Richard C. Brown (Professor Emeritus, University of Alabama) has published his new book *The Tangled Origins of the Leibnizian Calculus: A Case Study of a Mathematical Revolution*. (World Scientific, 2012) The book originates in an unfinished seminar paper written for Thomas Kuhn in the fall semester of 1960 and consequently may hold the record for being the most delayed completion of a college assignment ever recorded! In time of composition, it even exceeds Leibniz's own multi-decade but unsuccessful effort to write a history of the Guelph family for his masters, the Dukes of Hanover. Professor Brown has also published a slightly earlier book *Are Science and Mathematics Socially Constructed? A Mathematician Encounters Postmodern Interpretations of Science* (World Scientific, 2009). More information is available at <http://www.worldscibooks.com/mathematics/7039.html> and <http://www.worldscibooks.com/mathematics/8413.html>.

Jimena Canales (Harvard University) was awarded an ACLS Charles A. Ryskamp Research Fellowship (2012–2013) for the project *Einstein Against Bergson: Think Twice*.

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Robert Goulding (University of Notre Dame) has been awarded an ACLS fellowship for the academic year 2012–2013. The title of his project is *Renaissance Optics between Experiment and Imagination: The Mathematical Practice of Thomas Harriot*. One reviewer wrote that "... this is a proposal for what in the sciences might be called basic or fundamental research of a particularly heroic variety."

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Bert Hansen (City University of New York) has created a Web site for scholars interested in medicine in art in 19th century France in order to provide free access to the unpublished dissertation of his former student, Richard E. Weisberg: "The Representation of Doctors at Work in Salon Art of the Early Third Republic in France" (New York University dissertation, 1995). Richard suffered an unexpected illness in 2011 and died in May of that year. Although it was his intention to revise this nearly 900-page work into a book or journal articles, his time was consumed as founder and principal of Cobble Hill School of American Studies and adjunct professor of Educational Leadership at Touro College. His work provides substantial

material on French images of physicians, including extensive quotations from primary sources. In addition to downloadable PDFs of individual chapters, the site includes biographical information and a complete list of the dissertation's 152 figures. The URL is <http://faculty.baruch.cuny.edu/bhansen/weisberg.home.htm>. For questions, write Bert.Hansen@Baruch.CUNY.edu.

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Andrew Janiak (Duke University) was awarded an ACLS Collaborative Research Fellowship for 2012 for the project *Émilie Du Châtelet and the Struggle between Science and Philosophy*.

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Adrian Johns (University of Chicago) was awarded an ACLS Fellowship for 2012 for the project *The Intellectual Property Defense Industry*.

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Hannah Landecker (University of California, Los Angeles) was awarded an ACLS Fellowship for 2012 for the project *American Metabolism: Food, the Body, and Time*. Professor Landecker received the HSS's Suzanne J. Levinson Prize in 2008 (awarded to the best book on the history of the life sciences and natural history) for *Culturing Life: How Cells Became Technologies* (Harvard University Press, 2007).

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MEMBER NEWS

Manfred Laubichler has been named a President's Professor at Arizona State University, joining 20 others at ASU who are established as leading researchers and also recognized for their substantial contributions to undergraduate education. He joins HSS members **Richard Creath** and **Jane Maienschein**, both of Arizona State University, in holding that distinction.

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Gregg Mitman (University of Wisconsin-Madison) was awarded the 2012 William H. Welch Medal for his book *Breathing Space: How Allergies Shape our Lives and Landscapes* (Yale University Press, 2007). The award was presented at the American Association for the History of Medicine annual meeting in Baltimore, Md., in April. The Welch Medal is awarded to one or more authors of a book (excluding edited volumes) of outstanding scholarly merit in the field of medical history, published during the five calendar years preceding the award. Additionally, Professor Mitman and Paul Erickson (University of Wisconsin-Madison) won the 2012 Ralph Gomory Prize for their article "Latex and Blood: Science, Markets, and American Empire," which appeared in *Radical History Review*, spring 2010. This prize, made possible by the Alfred P. Sloan Foundation, recognizes historical work on the effects of business enterprises on the economic conditions of the countries in which they operate. The award consists of a \$5,000 cash prize,

presented at the Business History Conference annual meeting.

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Maria M. Portuondo (Johns Hopkins University) has been promoted to Associate Professor with tenure in the Department of the History of Science and Technology at The Johns Hopkins University.

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Sarah Richardson (Harvard University) was awarded an ACLS Fellowship for 2012 for the project *The Maternal Imprint: Situating the Science Maternal Effects, 1900–Present*.

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Alan J. Roche (Case Western Reserve University) has been given the title of "Distinguished University Professor," which accompanies the endowed chair (the Henry Eldridge Bourne Professorship) that he has held for 17 years.

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Londa Schiebinger (Stanford University) is directing the Gendered Innovations in Science, Health & Medicine, and Engineering project, an international collaboration funded by the European Commission, National Science Foundation, and Stanford University. Presented as a globally accessible, peer-reviewed website, Gendered Innovations: (1) develops practical methods of sex and gender analysis; (2) provides case studies as concrete illustrations of how sex

and gender analysis leads to new knowledge and innovation. See the project at:

<http://genderedinnovations.stanford.edu/>.

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Alistair Sponsel has been appointed by the Vanderbilt University as an assistant professor of history. He comes to Vanderbilt from Harvard University, where he was manager of the U.S. branch of the Darwin Correspondence Project and a postdoctoral fellow and lecturer in the Department of the History of Science. He received his Ph.D. in history of science from Princeton University in 2009. Sponsel studies the history of geographical exploration, the environmental and life sciences, the physical and earth sciences, and Britain and the British Empire, from the eighteenth to the twentieth centuries. He recently completed a book manuscript on Darwin's theory of coral reef formation.

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Katherine Zwicker recently completed a Ph.D. in history at the University of Alberta (Edmonton, AB, Canada). She will continue her research in the history of science, technology, and medicine as a post-doctoral fellow at the University of Saskatchewan (Saskatoon, SK, Canada). The fellowship is funded by the SSHRC Strategic Knowledge Cluster Grant, "Situating Science."

MEMBER NEWS

Two New Interest Groups Form at HSS

The HSS Council has approved the formation of two interest groups: the Forum for the History of the Chemical Sciences (FoHCS) and the Physical Science Forum (PSF).

FoHCS's aim is to promote research, education, and communication on the historical, social, and philosophical aspects of chemistry and related chemical sciences and technologies. FoHCS will advance this goal by encouraging innovative research and teaching in the history of chemistry and the chemical sciences, by improving the visibility of such research within the History of Science Society (HSS), by fostering international communication and collaboration between individuals and institutions with an interest in chemical history, and by identifying and creating new opportunities and resources for scholars who study the chemical sciences.

Long-time HSS member **Sy Mauskopf** was instrumental in leading the formation of this group, helping to organize a well-attended breakfast meeting of interested scholars at the HSS meeting in Cleveland in 2011. For further information, contact Seymour Mauskopf at shmau@duke.edu.

PSF will focus on furthering scholarship in the history of the physical sciences as broadly

understood, including but not limited to: physics; earth, space, and atmospheric science; astronomy; and materials science. It will help forge a more coherent community for those with a core specialty in these sub-fields with a particular emphasis on developing the connections linking these sub-fields and exploring their resonance with wider scholarship. The ultimate goals are: to foster generative dialogue and interaction within such a community for the sake of refining historiography and deepening historical insights; to maximize scholarly contributions to the history of science; and to integrate historians of physical science more closely with the history of science community. The Forum will accomplish these goals by sponsoring HSS sessions and workshops, including joint sponsorships in cooperation with other HSS Forums and Caucuses, and by organizing social events at HSS meetings. For further information, contact Catherine Westfall at westfa12@msu.edu.

These interest groups join several other HSS groups: the Forum for the History of Science in America (FHSA), the Forum for the History of Human Science (FHHS), the Forum for the History of Science in Asia (FHSAAsia), and the Earth and Environment Forum (EEF). The fora offer our members a chance to exchange ideas in a setting that is more intimate than the HSS annual meeting.



Left: Audrey Davis; Right: Miles Davis

HSS Executive Office Receives a Special Gift

Long-time HSS member **Miles Davis** has donated a near-complete run of *Isis* to the HSS Executive Office. The gift includes the first issue of *Isis* (owned by his father Watson Davis, the former director of Science Service). The run continues almost uninterrupted to the present and includes issues that belonged to the personal collection of Miles and his late wife, **Audrey Davis** (former Secretary of the HSS and a pioneer for women in the history of science). The gift is particularly appreciated as we celebrate the centennial of *Isis* (established in 1912 and first published in 1913). We are grateful to Miles (and Audrey) for this generous donation.

MEMBER NEWS**News from Vanderbilt's Center for Medicine, Health and Society**

Laura Stark arrives at Vanderbilt from Wesleyan University, where she was assistant professor of Science in Society and of Sociology. Professor Stark works on medicine, morality, and the modern state. She is the author of *Behind Closed Doors: IRBs and the Making of Ethical Research* (Chicago, 2012) as well as several articles and book chapters on the history of ethics and on bureaucracy in everyday practice. Her current book project, *The Life of the Clinic*, uses archival documents and oral histories to explore the lives of “normal control” research subjects who enabled and sustained the first clinical trials at the US National Institutes of Health between 1953 and 1983. Professor Stark received her PhD from Princeton University in 2006; was a Postdoctoral Fellow in Science in Human Culture at Northwestern University from 2006 to 2008; and held a Stetten Fellowship at the Office of NIH History at the National Institutes of Health from 2008 to 2009. She is also Assistant Editor of the journal *History & Theory*.

Kenneth MacLeish, a recent PhD from the University of Texas at Austin, begins his faculty career at MHS after completing a Robert Wood Johnson Health and Society Scholars postdoctoral fellowship at Rutgers University. Professor MacLeish is an anthropologist who studies how war takes shape in the everyday lives of people whose job it is to produce it—U.S. soldiers and their families and communities. His book, *Making War: Everyday Life at Ft. Hood*, is forthcoming from Princeton University Press in fall 2012. Based on twelve months of ethnographic fieldwork at and around the U.S. Army's massive base in central Texas, the work explores the bodily, interpersonal and collective vulnerability that characterizes the daily experience of war making, both on and far beyond the battlefield. Professor MacLeish's current work explores the intersection of the wars in Iraq and Afghanistan with other areas of social, political and personal life in the U.S. by investigating ill and injured soldiers' experiences of Army medicine and the Veteran's Administration's complex disability evaluation and compensation processes.

Amy Non (Anthro/MHS) is currently completing a Robert Wood Johnson Health and Society Scholars fellowship at Harvard University. Professor Non is a molecular anthropologist with an interest in researching the biological and sociocultural contributors to racial inequalities in health. Her work has specifically addressed the relative contributions of genetic ancestry and sociocultural factors to explain racial disparities in hypertension in Puerto Rico and in the US. Professor Non's ongoing research also investigates the biological consequences of racism and other psychosocial stressors, particularly during early life developmental stages. She specifically focuses on epigenetic modifications that may occur as a result of early life exposures to stressors which may ultimately be linked to the development of chronic diseases. Professor Non received a Masters of Public Health degree in fall 2009 and received her PhD in Anthropology from the University of Florida in summer 2010. Further Information: <http://www.vanderbilt.edu/mhs>.

MEMBER NEWS

News from AAAS: A Report on Section L, History and Philosophy of Science

By Mark Largent, HSS Delegate and Secretary to Section L

After introductions of the officers and attending members, the two Philip Morrison fellowship recipients (**Sean Cohmer** and **Elizabeth Yockey**) were introduced and last year's minutes were approved. **Barbara Rice**, who coordinates the AAAS conferences, described AAAS's ongoing and future improvement to its online systems. She also reported that almost three-quarters of this year's sessions had an international presence.

The results of this year's elections added the following members to the section's officers: **Davis Baird** (Clark University) was elected the Chair elect; **Naomi Oreskes** (University of California, San Diego) was elected the Member-at-Large; **Thomas Nickles** (University of Nevada-Reno) and **Robert Pennock** (Michigan State University) were elected to the Electorate Nominating Committee; and **Vassiliki Betty Smocovitis** (University of Florida) was elected a Council Delegate. **Mark Largent** (Michigan State University) has agreed to serve as the section Secretary, as well as the HSS delegate to Section L.

This year's new fellows from Section L were announced:

Steven J. Dick, Retired, National Aeronautics and Space Administration: "For distinguished contributions to the history of astronomy and space science, and his leadership at the U.S. Naval Observatory and director of the NASA History Office."

W. Patrick McCray, University of California, Santa Barbara: "For distinguished contributions to scholarship and education in history of science, technology and instrumentation, particularly of intellectual and social interactions in recent astronomy and physics."

Carolyn Merchant, University of California, Berkeley: "For distinguished contributions to the field of history and philosophy of science, particularly for the history of the scientific revolution and gender and science."

Helga Nowotny, European Research Council: "For outstanding leadership in promoting international excellence in and understanding of science, policy, and education, most recently in courageous leadership of the European Research Council."

Rosemary Stevens, Cornell University: "For original work at the trans-disciplinary boundaries of public health, policy, and historical understanding of their social development, and for exceptional service to the professions."

Section Secretary **Jonathan Coopersmith** reported that Section L had \$2,711 plus deferred funds of \$919 in its budget. This amount is larger than usual because the section has not received its usual number of requests from graduate students for support. The section discussed how to encourage more graduate students to present posters at the 2013 AAAS meeting in Boston, MA.

The theme for next year's AAAS meeting will be "The Beauty and Benefits of Science." Section members discussed potential sections for next year's meeting focusing on visualization in science, the 40th anniversary of the Nuclear Test Ban Treaty and the creation of the Equal Opportunity Employment Commission, the centennial of the Bohr atom, the concept of beauty in science, natural theology, the pure/applied distinction, the value and simplicity of science, science education, the 125th anniversary of the Geological Society of America, and the 1,000th anniversary of the compilation of Avicenna's Canon of Medicine.

[The members of Section L would like to offer a hearty "Thank you!" to Jonathan Coopersmith for his many years of service as Secretary of Section L. The secretaries of the sections provide essential continuity to ensure the smooth running of each group.]

MEMBER NEWS

A Report on Section X, Societal Impacts of Science and Engineering

By Jay Malone, HSS Delegate

The business meeting for Section X of the American Association for the Advancement of Science (AAAS) took place on 17 February 2012. After welcoming everyone, Chair **Rachel Levinson** highlighted the section's campaign to let all AAAS members know that Section X can be their secondary or tertiary section. She announced the election of **Peter Blair** as chair elect, along with other election results, including HSS member **David DeVorkin**, who will serve on the Electorate Nominating Committee. Section Secretary **Stephanie Bird** informed attendees that Section X sponsored the most sessions of any other section in AAAS. She reported on a healthy budget of \$4,600, with \$2,300 being rolled over from last year. The Section received requests totaling \$17,000 for travel, \$2,500 of which was paid. Bird also relayed that X was working with Section L members in the hope that those in L would designate X as their secondary or tertiary group.

Ian King, AAAS director of membership and marketing, gave an overview of AAAS's Member Central portal. AAAS believes that the portal has led to a slight increase in membership as AAAS

tries to build community. Each of the sections in AAAS are being given special section pages where they can highlight their activities. About 10 years ago sections had the opportunity for a AAAS web presence but few took advantage of this opportunity. AAAS is again pushing for a web presence with an intent to market the sections, which should begin in April 2012. Each section will list its history, its purpose, articles of incorporation, etc. The improvements are part of Director Alan Leshner's goal of providing a fundamental reappraisal of the AAAS structure. As mentioned in the Section L report, the theme for the AAAS conference, to be held in Boston, Massachusetts (14–18 February 2013) is "The Beauty and Benefits of Science." Themes are designated by the president elect of AAAS and the 2013 version was taken partly from Eugene Wigner's "The Unreasonable Effectiveness of Mathematics in the Natural Sciences" (1960). The deadline for symposium proposals was 30 April 2012 but poster submissions are still possible. Further information can be found at <http://www.aaas.org/meetings/2012/program/symposia/submit/>.



**Please join the AAAS
in Boston for the
2013 AAAS Annual Meeting
14-18 February**

**HSS members will be
eligible to receive AAAS
member registration rates.**

**Please contact the Executive
Office for more details.**

How History of Science and Technology Can Forge Marketing Careers

Brett Steele

(This is the second installment of a two-part series in which the author describes opportunities for historians of science outside of academia. Part one highlighted the kinds of sophisticated strategic reasoning that graduate training in the history of science can impart (<http://www.hssonline.org/publications/Newsletter2012/April-innovation.html>). Part two discusses how this type of preparation helps those who are seeking careers in fields such as marketing, sales, and advertising.)

What follows are my personal observations about the value of the academic discipline of history of science and technology for marketing careers, especially in the high-tech domain. My intention here is to help orient graduate students in this field who are seeking more lucrative career options, as well as point out to their professors a potentially “practical” benefit of their work in the corporate domain.

I was working in Washington, D.C. as a researcher at the newly established Homeland Security Institute for over three years when I was suddenly laid off in 2007. The senior management had apparently decided to purge their organization of the economics-oriented researchers. Fortunately, I soon found another position with Ideal Innovations, Inc., a high-tech government contracting firm that pioneered

the use of biometrics in Iraq and Afghanistan. I was hired to serve as a Program Manager at the Joint Improvised Explosive Device Defeat Organization (JIEDDO), a position in which I hoped to gain more practical science and engineering experience. Unfortunately for that goal, I soon received praise from the senior management of Ideal Innovations, Inc. after writing some fairly diplomatic letters in response to Congressional inquiries about particular technological developments at JIEDDO. Within a few weeks, Ideal Innovations asked me to join their just-created marketing office to improve their ability to win government contracts.

In my new capacity as a marketing manager, I quickly learned that a central challenge in winning government contracts involved designing and constructing a compelling proposal narrative. This involves synthesizing a great deal of complex scientific and technological information, clearly presenting the historical development associated with the firm and the government agency in question, and incorporating a perceptive strategic vision into the proposal. What surprised me was how useful my education and experience as a historian of science and technology could be in such work. Sure, my scholarly abilities as a historian was essential in my prior research

positions at the RAND Corporation and the Homeland Security Institute, but it had never dawned on me that it could be this useful in corporate marketing. The basic proposal-writing “best practices” all proved to be quite obvious to me. These included developing a compelling narrative flow, breaking down complex scientific and technical concepts into coherent bite-size pieces, minimizing the passive voice and nominalized verbs while writing instead about “actors engaging in action,” and highlighting the drama of individual achievements.

In contrast, my engineering and business colleagues struggled to even recognize the relevance of such practices. As a result, I spent considerable effort editing and rewriting their contributions to maintain such basic marketing standards.

My responsibilities as a marketing manager went far beyond proposal writing. After becoming Ideal Innovation Inc.’s Energy Programs Manager, I had to learn about writing white papers to attract potential clients. Much to my astonishment, articulating the historical context of the innovation being marketed was a central requirement, as recommended by Michael Stelzner in *Writing White Papers: How to Capture Readers and Keep them Engaged* (2007). Yes, the ability to engage in historical research about

Forging Marketing Careers, *cont.*

science and technology, and develop it into a coherent narrative that retains the reader's interest is a critical marketing talent in the high-tech domain. I also found that offering a potential client a white paper, modeled partially after an *Isis* or *Technology and Culture* article, significantly increased my ability to have senior government officials take me seriously. A lot of marketing managers and sales agents lack such academic means, as I observed in government-sponsored trade shows.

Marketing a high-tech product involves much more than writing and distributing persuasive sales arguments, of course. It must also be accompanied by both informal and formal presentations to establish your trustworthy character. Yet again, my training as a teaching assistant and my experience as a university lecturer in history of science and technology was invaluable for this task. It likewise shocked me how similar the experience was of presenting a complex sales presentation to skeptical government officials and giving a history of science and technology lecture to fault-finding graduate students. The experience of my PhD oral exams and the interrogations of academic search committees also went far in helping me transform hostile government officials into enthusiastic clients. In short, the experience of becoming an academic historian of science and

technology delivered unexpected dividends when working on either the demand-side or marketing domain of a high-tech firm.

Another practical issue should also be considered. Introducing a product to a new market or a new customer base requires a tremendous amount of research to understand the orientation of that "alien" culture. You cannot possibly make a compelling sales argument unless you have a reasonable understanding of the customer's cultural outlook—especially from an organizational perspective. And people here in Washington, DC wonder why virtually all retired generals and admirals earn such lucrative salaries as consultants in the military-industrial-academic complex. My training as a historian certainly equipped me well with the necessary research mindset to accomplish such a task. After all, researching actors and organizations of the past also involves trying to understand profoundly alien cultures.

Unfortunately, PhD-level humanities students lack a great reputation in the corporate business world. The common stereotype includes being easily bored, having a narrow range of interests, being poor team players, and having insufferable egos. And successful corporate marketing and sales work certainly demands a consistent detachment from your ego given all the rejection one inevitably encounters. So,

what is an enterprising history of science and technology PhD student to do? My suggestion is to augment your graduate studies with some formal marketing or strategic communication courses, as well as relevant internships in the corporate or government domains. And if your traditional-minded academic advisors protest, simply say that you are seeking to become a more persuasive historian and a more strategic-minded professor.

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Brett Steele received his PhD from the Program for the History of Science, Technology, and Medicine at the University of Minnesota, where he wrote a dissertation on the history of calculus-based ballistics and artillery practice in the eighteenth century. He subsequently taught at UCLA, Stanford University, Georgetown University, and National Defense University. His publications include The Heirs of Archimedes: Science and the Art of War through the Age of Enlightenment (MIT Press, 2005), UN Nation Building from the Congo through Iraq (RAND, 2005), "Rational Mechanics as Enlightenment Engineering: Leonhard Euler and Interior Ballistics," in Gunpowder, Explosives and the State, Brenda Buchanan, ed. (Ashgate, 2006), and finally, "An Economic Theory of Technological Products," in Technological Forecasting and Social Change (March 1995). Dr. Steele recently received the 2012 Engineer-Historian Prize by the American Society of Mechanical Engineers for his work on the history of ballistics.

Writing Outside the Academic Box

Michal Meyer (Chemical Heritage Foundation)

A few years ago, when I worked for the History of Science Society as the *Newsletter* editor, I remember Jay Malone telling me that most popular history of science books are not written by historians of science. I never really understood why. I now work for the Chemical Heritage Foundation as the editor in chief of *Chemical Heritage* magazine, and I think I have a better grasp of the intricacies of non-academic history of science. Lynn K. Nyhart's article in the January issue of the HSS *Newsletter* (<http://www.hssonline.org/publications/Newsletter2012/PDF/Jan2012Newsletter.pdf>) pushed me further in thinking about “them,” the non-expert audiences for history of science.

My job as editor of a magazine that sits at the intersections of science, history, and culture has given me a different perspective, that of someone with one foot in the academic world and another in the story-telling world. The magazine includes short articles and longer features. While in-house writers and interns produce many of the shorter pieces, most of the features are written by resident fellows at CHF who are either working on their PhDs or are post PhD. All have proven a delight to work with. They have also crystallized for me why so few historians write popular history of science: historians are trained to produce arguments not narrative arcs. Their core audience

is other historians of science who will judge an article or a book according to criteria that are mostly irrelevant to non-expert readers. This does not mean that historians of science cannot or should not write for other audiences, but it does mean being attentive to audience expectations and to writing style. So here are some thoughts on different audiences and the varied uses to which history of science is put to use in *Chemical Heritage*.

High-school chemistry teachers tell me they are looking for context and stories to enliven the science they teach and which the textbooks ignore. These teachers want an entertaining Whig approach to history as a way to catch their students' interest. For example, a short piece that includes Isaac Newton chasing counterfeiters may lead them to the chemistry of rare earth metals through **modern anti-counterfeiting techniques that use these rare earths**. A useful parallel is high-school STEM education. The question of how best to encourage youngsters to pursue science often comes up at CHF talks and symposiums that focus on modern science. One answer keeps cropping up: kids must fall in love with science. Only after falling in love will they be motivated enough for the hard slog required to learn science. Stories about science—whether it's the **discovery of PKU**, the lives of

two African-American chemist brothers, or the **history of Spanish-language comics devoted to the heroes of science**—give students a way to connect to what can often be a forbidding subject. This is not history for history's sake. At its best this approach will give students a taste for history of science and a sense of its intrinsic value, which may lead them to take a college course or two in the subject. These students will discover that there is a world worth exploring behind the stage on which science plays out. At its worst such an approach does nothing more than sugar coat the science to make it go down more easily. In both cases the value of history of science lies purely in its utility to science teachers. (I neglect high school history teachers here because subject boundaries make integrating history of science difficult.)

Another audience is scientists who read to discover the history of their discipline and who might also wish to provide some historical context for their own students. Recently a professor e-mailed to let us know that a **feature story on a World War II natural rubber project** was a perfect match for his economic botany class. The guayule story included the fall of Pearl Harbor, the loss of a vital wartime commodity, and interned Japanese-Americans struggling to prove their patriotism through

Writing Outside the Academic Box, *cont.*

their attempts to turn a wild plant into a new source for rubber. This article was adapted by the author Mark Finlay from his book, *Growing American Rubber*, and involved “storifying” one section of his book while retaining some of the historical complexities. A strong narrative arc and interesting characters will carry readers through more nuanced history of science, if only to find out what happens at the end. People and their trials and tribulations keep non-experts reading for longer than do argument and theory. Object biographies can also work if the objects have their own story arcs.

Sometime scientists are upset by how science is presented in all its messy glory. We recently received a letter from a reader angered by the non-rational aspects of science in a recent issue, which included a short article on Anton Mesmer and an interview with a chemical engineer who doubts evolution by natural selection. We published the letter and used the opportunity to respond, making a case that our job is not to glorify science as an ongoing triumph of reason over irrationality by genius heroes. Instead, our job is simply to tell the stories of chemistry with as little tampering and distortion as possible. Our job is also to reintegrate science into its broader cultural context. A few weeks after publication I was pleasantly surprised to receive a positive response from this previously critical reader. Success, one person at a time!

The third and most nebulous category of readers I call the intellectually curious—those who may have an interest in science and its history but have little to no background in the field. They read to expand their knowledge and also for pleasure and so will not slog through dense articles. Good stories, rather than specific subject matter, are essential to reach this type of audience.

One possible criticism of the magazine is that we focus on storytelling rather than real history of science. There’s certainly a kernel of truth to this, but then our goal is to reach out to people, which means going to where they are rather than expecting them to come to us. No one outside of academia is required to read history of science and historians of science write mostly for other historians. This is a long-winded way of saying that historians of science are usually not an audience for this kind of writing, but they certainly can be contributors.

In my experience, historians of science are keen to write for wider audiences, and they can do so very engagingly, but only after they consciously give up writing for other historians. In their writing for this non-expert audience they do not need to position themselves in the field or compare their arguments with that of colleague X or Y. In other words, historians writing for broader audiences have no need to show their expertise in order to be taken seriously. A PhD after a name automatically grants expert status.

A colleague who writes popular history of science advises prospective authors to not hide behind qualifications. That is, if the mass of evidence points to something having happened even if there is no direct evidence, write as if it actually happened. Qualifying destroys narrative, so be bold and disregard historical niceties. After all, works not aimed at academics are unlikely to be cited by academics.

This kind of writing is currently not valued in academia in terms of tenure and promotion decisions. It also takes time away from academic work. Our magazine contributors tend to be either fellows in residence at CHF or already tenured scholars. For those willing to put in the time and effort to reach a broader audience, whether via a magazine article or a book, here are some questions to ponder. As author, what do you want to achieve? Who do you envision your audience to be? How will you engage this audience? And as you put your fingers to the keyboard remember that you are not writing for other historians of science. “Storify” your work. Simplify a little and find the good tales on which to hang arguments; include compelling characters along with their conflicts and motivations; avoid academic language. In sum, bring your characters and their world to life for the reader.

Good luck!

Photo 51—A Recent Addition to History-of-Science-Inspired Theatre

Pnina G. Abir-Am (Brandeis University)

The play *Photograph 51*, named after the sharpest image in a series of DNA X-ray photos taken by Rosalind Franklin (1920–1958) in a biophysics lab at King’s College, London in 1952, played this past spring at the Central Square Theatre¹ in Cambridge, MA. This Theatre is fittingly located between M.I.T. (which co-sponsors it) and Harvard, two institutions still recovering from a few scandals on the under-representation of women in science. The play is thus timely, coming as it does on the heels of “Barriers and Bias,” the National Academy of Science Reports (2006, 2007, 2009) that try to address the persisting gender inequality in science. But the play has a wider connection to the history of

science because it deals not only with gender bias in science, but also with the paramount issue of credit allocation in scientific discovery.

HSS Newsletter readers may recall that the 2003 HSS Annual Meeting² (incidentally held in Cambridge, MA, not too far from this Theatre) featured two sessions on “DNA at 50” which explored new perspectives on the discovery of DNA structure at its 50th anniversary. But unlike our HSS speakers who explored archival material, (in the regular session) or their own memories (in the panel at which attendees, including former HSS President Gerald Holton, posed questions to local DNA luminaries, Paul Doty, Wally Gilbert, and Alex Rich), this well-

received play relies mainly on biographies,³ and on a namesake PBS documentary, aired in 2003: “DNA: Secret of Photo 51.”

The discovery of DNA’s structure, having been embroiled in controversy for decades,⁴ provides a perfect opportunity for playwrights to apply their dramatic license. The controversy revolves around the unacknowledged use of Rosalind Franklin’s work in the famous paper announcing the double helix conformation of DNA. Franklin’s premature death enabled others to both obscure her role and take all the credit for themselves,⁵ much as the premature death of the discoverer of the Nile’s origins provided an opportunity for another “colleague” to claim all the credit for himself.⁶

¹ The play’s run was February 9 to March 18, 2012; for information on the playwright, director, and actors in this production see CentralSquareTheatre.org; see also the review in the Boston Globe, bostonglobe.com/arts/2012/02/15picture-scientific-and-human-... The play had previously been staged in LA and WDC, where it was also well received.

² <http://www.hssonline.org/Meeting/oldmeetings/archiveprogs/2003archiveprogs/2003cambridgemeeting.pdf> [co-organized with Bill Summers of Yale]

³ Rosalind Franklin, *The Dark Lady of DNA*, by Brenda Maddox, 2003, was better received than *Rosalind Franklin and DNA*; (Anne Sayre, 1975) the latter was initially dismissed as a “feminist plot,” but was reissued in 2000. One of the speakers in our HSS session in 2003, Lynn Osman Elkin, a Professor of Biology at UC-Berkeley, is transforming Sayre’s book into an educational manual. Her talk was based on her essay, “Rosalind Franklin and the Double Helix,” *Physics Today*, March 2003, 42-48. She also served as a consultant to the namesake PBS documentary.

⁴ For example, Francis Crick and Maurice Wilkins, who shared the 1962 Nobel Prize in Physiology with James D. Watson for their work on DNA, succeeded in blocking the latter’s *The Double Helix, A Personal Account of the Discovery of DNA Structure* from being published by Harvard University Press but they did not object to a commercial press. Crick referred to it as a “pack of nonsense.” But the pertinent correspondence on the controversy surrounding the 1968 publication became available at a much later time.

⁵ Elkin 2003, Maddox 2003, Sayre 1975, op.cit. These authors were concerned to establish Franklin’s centrality rather than providing a full historical account of the discovery of DNA structure. I aim to provide such an account in my forthcoming book, *DNA at 50: From Memory to History*, which reexamines all the various players, both known and unknown, in the discovery of DNA structure, including Franklin, in light of new archival sources.

⁶ The discoverer, John H. Spelke died accidentally on the day of a projected debate with Francis F. Burton, who then proceeded to claim the discovery for himself. To this day Burton is known as the Victorian explorer who solved a riddle that preoccupied civilization since ancient Greek and Roman times, while the actual discoverer remained obscured for a century and a half. See Tim Jeal, *Explorers of the Nile: The Triumph and Tragedy of a Great Victorian Adventure*. (2011)

Photo 51, cont.

It is thus impossible to grasp the importance of a play⁷ such as *Photograph 51*, that “succeeds in focusing a long-overdue spotlight on Rosalind Franklin...the playwright makes Franklin seem worthy of that spotlight, not just as a neglected figure of science but as a compelling character,”⁸ without recalling the insightful “cultural background” that precedes the play. According to *The Double Helix*, which is included on the reading lists of many courses and remains the only “source” most theatre goers would have read, Crick and Watson had to leave their official scientific missions in protein and virus structure, respectively, so as to rescue scientific progress in DNA from its blockage at the hands of Rosalind Franklin. She is portrayed as a recalcitrant woman scientist who refused to collaborate with their friend, the more-veteran lab member Wilkins, even though she was presumably unable to interpret her own results because of her supposed “anti-helical” bias. Consequently, the three men had no choice but to obtain the golden data by whatever means they could. (Those means were still debated half a century later.)

Though the transition from *Photo 51* to the model of the double helix raises interesting questions on the relationship between the context of discovery and the context of justification, which could have been pursued in the manner of *Copenhagen*,⁹ *Photograph 51* opts for interrogating the role of gender bias in preventing Franklin from both completing the discovery of DNA structure on her own, as well as in not getting credit for it. This “take” is justified by the fact that in addition to her “scientific sins,” (i.e. not being content in the role of an assistant and making discoveries on her own) Franklin was further demonized as “Rosy.” That nickname, used behind her back, captured a female character as negative as the male imagination of the early 1950s could sustain, i.e. a glasses-wearing bluestocking, poorly dressed, ignorant of lipstick, lashing at more veteran men, asocial and hence lonely, and last, but not least, lacking romantic prospects at the ripe age of 31. That “Rosy” was the very opposite of historical reality did not seem to matter to its “creators” who openly pandered to their audience’s sexism.

Photograph 51 thus revolves around the sensible idea that if there was a failure to collaborate, then the blame for it must be shared more equitably among the involved parties. Since the charge that Franklin was uncooperative originated with Wilkins, the play focuses on the role of gender in poisoning the work relationships between him and Franklin. But the play is unable to project a “balance of blame,” not for lack of talent on the part of the playwright whose dialogues are crisp and punchy, but rather because our culture remains so suffused with gender stereotypes that a mere balancing effort is not sufficient to better distribute blame across the gender divide. For example, Wilkins’ portrayal as smug and entitled does not strike the audience as so bad when compared to its portrayal of Franklin as a combative, fierce, unbendingly serious, and uncompromising female character.

However, the play’s portrayal of Wilkins as a captive of sexism who persists in regarding his colleague first and foremost as a woman whom he must date instead of seeing in her a scientist with complementary skills with whom he

⁷ *Photo 51* is so far the more successful among several plays written on Rosalind Franklin. Commissioned in 2008 it won the STAGE prize for plays on science and technology.

⁸ Dan Aucoin, *The Boston Globe*, 2-15-2012 (bostonglobe.com/arts/2012/02/15)

⁹ By Michael Frayn. (London: Methuen Drama, 1998) For its resonance among historians of science see “Copenhagen and Beyond: The Interconnections between Science, Drama, and History,” Seminar at the Niels Bohr Institute (NBI) organized by Finn Aaserud, Director of NBI Archive, November 19, 1999; “Drama Meets History of Science,” Symposium, NBI Archive, September 22-23, 2001. Mara Beller, Cathy Carson, Mathias Dorries, Robert Friedman, Jan Golinsky, Klaus Henschel, among others, address the issue of “blurred genres” in the dramatization of episodes from the history of science in ways that are suggestive for my analysis of *Photo 51*. See also “Creating Copenhagen, A Symposium Exploring Scientific, Historical, and Theatrical Perspectives Surrounding the Events of the Acclaimed Play ‘Copenhagen’,” GC-CUNY, New York City, March 27, 2000, Chris Smith and Brian B. Schwartz, “producers.”

Photo 51, cont.

might collaborate, evokes well the predicament of women scientists in an era of “unmitigated sexism.” One scene revolves around a box of chocolate that Wilkins tries to force on Franklin who, to his endless surprise, declines it firmly. Women such as Franklin who chose not to surrender their bodies, were expected at the very least to surrender their body of work; if they refused, then the work was snatched anyway. The pretext that she was uncooperative was invented to justify such a scenario.¹⁰

By focusing on Franklin and her diverse relationships with men colleagues, (bad with Wilkins, but great with the graduate student Ray Gosling, and would-be boyfriend, scientist Don Caspar) *Photograph 51* relegates the better-known saviors of scientific progress, Watson and Crick, further portrayed as a comic duo, to the margins, which is the way they must have looked in Franklin’s eyes. The play further contrasts the work ethics of seriousness of purpose and dedication on the part of Rosalind Franklin with the three men constantly bonding over drinks and having fun as they relax in gender-segregated dining halls. Since they spend so much time

socializing and have no results of their own, they seem aware that their only way to fame is to “sniff” Franklin’s crucial data. I borrow this term from a theatre reviewer who also observed: “Franklin...is the clear intellectual hero. She is the purest, most genuinely curious scientist. The men, a casual bunch next to the burning, all-business Franklin, tend to be various strains of pig—ambitious, sexist, anti-Semitic, etc.”¹¹

Indeed, this play dramatizes not only gender bias but also racial bias. In dialogues between Wilkins and Watson, Jews are referred to as difficult people or “ornerous,” whose loyalty to England should be questioned. There is enough in the play to suggest that race/ethnicity, as well as gender, were factors in Franklin’s decision to move to another lab. But perhaps both factors were even more important in providing the men with culturally endorsed motives for “blaming” her for their own problems, scientific and otherwise, thus paving the way for justifying their eventual “acquisition” of her data, data that she refused to surrender. In my own studies of the interaction between British science policy makers and Franklin’s lab, I came across references to “Jews

and foreigners” as an undesirable trait of the lab. Apparently that trait was sufficient to require a special oversight committee over the lab, which ironically became yet another avenue for leaking Franklin’s results.¹²

Photo 51 does not explore another major component of the politics of identity that also played a key role in the discovery of DNA structure, that of class. This is an odd omission since in the predominantly British context of the play, class may well have been more crucial than either gender or race/ethnicity in explaining behavior (still, the sheer combination of all three variables over-determined this case). As it “happened,” all three men who sniffed Franklin’s data belonged to families that lost their middle class status during the Great Depression and hence, became obsessed with regaining their prior social respectability. For all three, the only way up at the time meant an association with a major scientific breakthrough.

By contrast, Franklin belonged to an upper-class family with a distinguished record in both civic affairs and philanthropy. One great-uncle,

¹⁰ For other such cases see, for example, that of a woman scientist at an Ivy League university in the Northeast who complained that she felt mugged when the lab director put his name, as well as those of his three male protégées, on a discovery that she had made and was trying to publish; she was told to be content since she had not been raped; for further details see Catherine Brady, *Elizabeth Blackburn and the Story of Telomeres*, (The MIT Press, 2007) p. 43. The issue of misallocation of scientific credit affects of course both women and men, but this play deals with misallocation affecting a woman.

¹¹ Nelson Pressley, “Theater Review: ‘Photograph 51’ at Theater J,” *The Washington Post*, April 4, 2011.

¹² *Nature Reviews – Molecular Cell Biology*, 3, January 2002, 65-70.

Photo 51, cont.

Viscount Herbert Samuel, was Head of the Liberal Party before WW1. Another was Lord Mayor of London.¹³ This social background, further coupled with gossip that her family was wealthy, (Lord Rothschild, a scientist whose namesake Report played a major role in British science policy in the 1970s was a second cousin) and that she had an allowance (though she insisted on living mainly from her modest salary) would have positioned Rosalind Franklin in the mind of these three men, all resentful at being demoted to the verge of genteel poverty, as a perfect target for revenge.

If we further recall that Wilkins and Crick were left by their first wives, (the play includes a line to that effect) and that Wilkins and Watson constantly solicited help from Crick (who lived in an open marriage with his second wife, an artist) in “finding women,” a vexing subject discussed endlessly; (apparently the women did not stick around since Wilkins and Watson continued to search for them until age 40) then, the unavailable Franklin was a constant reminder of their own far-from-shining predicament. No wonder they

obsessed about her all the time and projected upon her their own social and scientific anxieties. The three men would have almost had to step outside their culture and society not to take advantage of an opportunity to become famous at the expense of a well to do, or “rich” in common parlance, Jewish woman who in their opinion didn’t even “need” a career in science. Class, race, gender, and sexuality melted any moral or ethical dilemma they might have faced. How could the playwright miss an opportunity to make more of the class, race and sex aspects of such material?!

Most of the reviews I have seen¹⁴ were appreciative of the production. (The sleek lab set is often praised, as well as the direction, and the acting.) To my delight they were also receptive of the main idea that a woman scientist with a compelling character, commitment to her vocation, and major scientific achievement was robbed of her share of glory by three men: her “emotionally constipated, professionally unsupportive colleague Maurice Wilkins,” a “bluff, worldly Crick” and an “intensely disagreeable Watson.”¹⁵ But at least one theatre

critic, was sufficiently troubled by what he calls an “ideological version of her story” in this play to conduct his own research.¹⁶ Though he praises the playwright for treading “a mostly sure-footed middle ground between the ideological version of the story and the more prosaic historical one,” the critic believes that his own research lowers the play’s dramatic impact (which revolves around the disparity of fortune between those who do the work and those who take the credit). That critic, who kept the nature of his “research” to himself, tries to salvage the status quo (i.e. that the distribution of credit for this discovery is problematic but it does not require major revision¹⁷) by invoking Franklin’s departure from King’s, among related insights. I omit them here not only for reason of space but also because they are already known to historians of science to be factually incorrect.

By highlighting the profound dependence of the double helix model upon Franklin’s work, the play joins those who raised questions as to why the scientific community continues to misallocate credit for this discovery for half a century.

¹³ See Maddox 2003 for information on Franklin’s many relatives in public life.

¹⁴ E.g. *The Boston Globe*, 2-15-2012; *The Washington Post*, 4-4-2011; *Los Angeles Chronicle*, 3-31-2009; among other theatre specific outlets, e.g. DC Theatre Scene, see note 16.

¹⁵ Trey Graham, “Theatre J discovers DNA”, Washingtoncitypaper.com (4-1-11)

¹⁶ Steven McKnight, dctheatrescene.com, 3-31-11.

¹⁷ In 2003, the British government marked the 50th anniversary of the discovery of DNA’s structure as “50 years of excellence in British science” and included Rosalind Franklin among the (now four) discoverers. In my above-mentioned book I also include Rosalind Franklin as a discoverer, a conclusion that differs from the current historiographic status-quo, as to the number of discoverers.

Photo 51, cont.

Though not as dramatic as “*Proof*,” David Auburn’s Pulitzer and Tony award winning play, at which audiences of hundreds gasp at once when the mathematician’s daughter tells his male student heirs “I did not find the proof in my father’s drawer; I wrote it,” *Photograph 51* exposes the audience to the perspective of a woman scientist who made a major discovery on her own, not as the daughter, wife, or relative of a male scientist. The play also caters to post-feminist sensibilities by suggesting that even a woman who prioritized a career in science over marriage can eventually meet a man who can both understand her passion for discovery and be romantically involved with her; this is so, especially if she is smart enough to look at younger men.

Finally, *Photo 51* also raises more general questions on the usefulness of such theatrical dramatizations for STEM initiatives, along with stimulating historians of science to reexamine a historiography that has accepted too easily the scientists’ version of discovery. In conclusion, despite its dependence on historiographically outdated material (the lack of collaboration between Franklin and Wilkins, or these materials’ key role in the case of Crick and Watson, pillars of the play and of the received

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History of Science Society Newsletter

CRS Examines STEM Funding at NSF

(Published with permission. “COSSA Washington UPDATE,” April 16, 2012, Volume 31, Issue 7)

The Congressional Research Service (CRS), which issues reports to inform Members of the U.S. Congress about federal programs and the choices that they need to make, has taken on the issue of Science, Technology, Engineering and Math (STEM) education at the National Science Foundation (NSF). The report was written by Heather Gonzalez, a CRS specialist in science and technology policy.

The document notes that the federal government has established a wide-ranging STEM education effort. In December 2011, an inventory by the White House Office of Science and Technology Policy found 252 STEM education “investments” totaling \$3.4 billion in FY 2010 across 13 federal agencies. Federal STEM education funding is concentrated at three federal agencies—the National Science Foundation (NSF or the Foundation), the Department of Education (ED), and the Department of Health and Human Services (HHS). Of these the NSF, the report indicates, has the most STEM education funding and largest number of programs.

Despite this, CRS points out that education funding at the Foundation has decreased as a percentage of the total NSF budget since FY 2003. These changes appear to result from

a combination of holding the main education account more-or-less constant while applying most of the Foundation’s FY 2003–FY 2011 budget growth to the main research account. However, in constant dollar terms, it appears that at least some of the increase in funding for research activities during the observed period may have come at the expense of education activities. Further, Congress reduced enacted funding levels for the Foundation’s main education account in both FY 2011 and FY 2012.

CRS suggests that “It is not clear if these funding changes reflect evolving congressional and Administration policy priorities and an intentional prioritization of research over educational activities at the NSF or if they reflect the cumulative impact of funding decisions made in response to specific conditions in specific fiscal years that happen to have had this effect.”

According to the report, the policy rationale for NSF involvement in STEM education is “their perceived impact on the U.S. Science and Engineering (S&E) workforce—and through it, on U.S. economic competitiveness and national security.” Many academic and business leaders have argued that STEM educational

Continued on Page 35

Photo 51, cont.

view, are both red herrings, invoked to justify problematic outcomes) and its avoidance of many other key issues in the discovery of DNA structure, as a comparison with the BBC movie *Life Story*, (1987) can easily reveal, this play can be seen as breaking new ground by calling attention to the key role of gender in the process and outcome of a major discovery.

From a more personal perspective, I hope that the play will prove useful in preparing the public, including historians of science and scientists, for a new, more radical interpretation of the history of the discovery of DNA structure. Soon audiences will need to cope with the historical evidence that I have been assembling for my book *DNA at 50*, evidence that is bound to surprise those who believe that we already know how the discovery of DNA's structure was made. Unlike the playwright, I do not need to use artistic license for the simple reason that the actual history of this discovery proved to be dramatic in its own right.

History of Science Society Newsletter

CRS Examines STEM Funding at NSF, cont.

weaknesses will lead to a diminished science and engineering workforce that will challenge U.S. economic prowess. Others argue that perceived limitations in the U.S. S&E workforce are overstated and that U.S. competitiveness is not threatened. A third view holds that perceptions of S&E workforce shortages are accurate if the increasing numbers of jobs that are technically non-STEM, but that require STEM competencies (e.g., analytical skills), are included in labor-demand calculations.

NSF's role in STEM education includes research on teaching and learning and improving teaching and retention of students in STEM subjects at both the K-12 and undergraduate education levels. The dissemination of NSF's STEM education research, including research evaluating the effectiveness of NSF STEM education programs, to other federal agencies and education stakeholders is an ongoing policy challenge, the report suggests. Some policymakers have responded to this challenge by seeking improved collaboration between federal agencies at both the portfolio and program levels, including sharing evidence-based approaches as a primary strategy toward accomplishing federal STEM education goals. At the program level, the Administration's FY 2013 budget request seeks funding for

three STEM education collaborations between NSF and ED.

CRS tells Congress it has a number of options regarding STEM funding at NSF and across the government. It can decrease funding for STEM activities across the government; a Government Accountability Office report claiming duplication and redundancies across federal agencies has helped fuel this option. Another avenue is to reduce NSF's role and increase other agencies', particularly the Department of Education. And there is the simple option to increase, decrease, or keep the same budgets for STEM at NSF as we move forward.

The report concludes: "As Congress weighs these various options in the context of the FY 2013 appropriations process, it may be useful to consider the short, medium, and long-term impact of congressional funding choices on the entire federal STEM education portfolio, on the respective research and education missions of the NSF, and on the general policy purposes (e.g., advancement of the national STEM labor supply) these investments seek to serve. Congress may also wish to consider these investments in the context of a national STEM education strategy."

OSTP Issues Progress Report on Public Access to Scholarly Publications

(Published with permission. "COSSA Washington UPDATE," April 16, 2012, Volume 31, Issue 7)

The White House Office of Science and Technology Policy (OSTP), complying with provisions of the America COMPETES Reauthorization Act of 2010, has issued a report on *Interagency Public Access Coordination*. The report focuses on "policies related to the dissemination and long-term stewardship of the results of unclassified research, including digital data and peer-reviewed scholarly publications, supported wholly or in part by funding from the Federal science agencies."

The report asserts that: "The Administration has long recognized the importance of improving the management of and access to the results of federally funded scientific research including digital data and peer-reviewed publications. Since 2008, OSTP has been working to coordinate with agencies to develop policies that assure widespread public access to and long-term stewardship of the results of federally funded unclassified research." In 2009, OSTP issued an initial Request for Information (RFI) on access to scholarly publications resulting from research conducted with Federal funding.

OSTP has established a Task Force on Public Access to Scholarly Publications (PASP) under the Committee on Science of the National Science and Technology Council. The PASP

includes representatives from the Department of Agriculture, Department of Commerce, Department of Defense, Department of Energy, Department of Health and Human Services, Department of Veterans Affairs, Environmental Protection Agency, National Aeronautics and Space Administration, National Science Foundation, and the Executive Office of the President including the Office of Management and Budget and the OSTP.

The Task Force is working, according to OSTP, on common objectives for the development of individual agency policies for ensuring public access to the results of federally funded research, including peer-reviewed scholarly journal articles and other peer-reviewed publications. It has, according to the report, gathered preliminary information, which includes the aforementioned RFI; a report from the congressionally convened Scholarly Publishing Roundtable; and recent recommendations from associations, societies, companies, and other organizations through a second RFI issued in November 2011. Responses to the RFIs have demonstrated strong support for agency action to allow public access to scholarly publications, with about two-thirds of respondents favoring making publications freely available to the public within 12 months of the publication date.

At the same time, agencies and public commentators are cognizant of the essential role that publishers and the peer review system play in advancing the scientific enterprise. Given these issues, "the PASP set out to explore what steps could be taken to expand public access while preserving the value that publishers provide to the scientific enterprise, creating new business opportunities, and maximizing the economic and societal benefits of the Federal investment in research and the resulting publications."

In examining policies already in place, OSTP found that the National Institutes of Health, responding to FY 2008 appropriations bill language, has a policy in place. OSTP describes it as "pretty straightforward." It utilizes the National Library of Medicine's Pub Med Central (PMC) database. The policy involves:

1. NIH awards fund institutions to conduct research. Compliance with the Public Access Policy is a term and condition of award.
2. NIH awards are used to produce peer-reviewed papers. NIH awards fund salary support to write papers and publications costs, such as page charges and open access fees.

Public Access to Scholarly Publications, *cont.*

3. The author, as the creator of the work, holds the copyright in the original paper. The author gives NIH a non-exclusive right to copyright to the original paper in PMC and may transfer to the publisher the balance of his rights, including an exclusive copyright for the final published version of the paper.
4. Authors of papers using NIH funds may publish in any journal they choose, provided they reserve a portion of their copyright to ensure their final peer-reviewed author manuscript is posted to PMC. Alternatively, authors may make arrangements for the publisher to post the paper to PMC.
5. Publishers can choose to not review or publish papers under the provisions of the NIH Public Access Policy.
6. Once a paper has been accepted for publication, the author can submit his or her final peer reviewed manuscript to PMC (or the publisher can start the process), or the publisher can submit the final published article to PMC directly.

The National Science Foundation (NSF), however, has moved more slowly on this issue. The National Science Board, its advisory body, has been more interested in data collection and preservation issues. According to the report, NSF's response has been the implementation of

a Project Outcomes Report (POR) requirement for all new awards made or existing awards that receive incremental or supplemental funding on or after 4 January 2010.

The PORs are written by Principal Investigators (PIs) specifically for the public, to provide insight into the outcomes of NSF-funded research. These reports are posted on <http://www.research.gov> for public viewing exactly as submitted by the PI or a co-PI. Acknowledging that these PORs are not a substitute for peer-reviewed scientific publications in content or value, NSF claims they are a source of information to members of the general public who are interested in learning how taxpayer dollars expand the Nation's scientific and engineering knowledge. Since the reporting requirement went into effect, about 3,500 PORs have been posted on Research.gov. NSF continues to discuss the issue of public access to peer-reviewed publications.

This whole issue continues to interest Congress with the Federal Research Public Access Act introduced in this session by Rep. Michael Doyle (D-PA) and Senator John Cornyn (R-TX).

Recent Developments in Big History

Craig Benjamin (Grand Valley State University)

The field of Big History has been around for close to twenty years, and is currently being practiced as a coherent form of research and teaching by hundreds of historians, physicists, geologists, biologists, and anthropologists at institutions around the world. Over the past few years Big History has been increasing its academic profile through a variety of new media programs and publications, innovations in pedagogy, and through the establishment of the International Big History Association. This article offers a brief overview of some of these developments, including the organization of the first ever Big History conference, to be held at Grand Valley State University later this year.

Developments in Media, Technology and Publishing—Media and technology organizations have been at the forefront of many of these recent developments in the field. David Christian (one of the pioneers of the field and the coiner of the name ‘Big History’) recorded a *Big History* course for The Teaching Company in 2008, which proved to be one of the best sellers in that company’s Great Courses series. This course is the medium through which Bill Gates discovered Big History. Christian was subsequently featured in a 2011 TED talk where he was introduced by Gates personally; and was an invited delegate to the February 2012 World Economic Forum in Davos. Both Christian and Fred Spier presented papers at a 2011 international symposium convened by Al Gore in 2011 titled “Drivers of Global Change.” All members of the

Board of the International Big History Association were featured guests at the 2012 Global Futures 2045 Conference held in Moscow in March 2012. The History Channel has also developed an interest in Big History, and recently aired a program titled “A History of the World in Two Hours,” which featured several well-known Big Historians.

Microsoft Research has also demonstrated a commitment to Big History through their development of the ChronoZoom interactive timeline tool. The ChronoZoom developers have worked closely with the Big History community to develop a tool to aid student comprehension of time relationships between events, trends and themes; and also a well-organized database of relevant digital information to facilitate Big History research. After ChronoZoom has been fully developed, Microsoft intends to make the technology freely available worldwide.

Publishers have also been showing an increasing interest in Big History. Recent books include Berkshire’s *This Fleeting World* by David Christian; Wiley-Blackwell’s *Big History and the Future of Humanity* by Fred Spier; and McGraw-Hill’s forthcoming publication of the first ever text book in the field, *Big History: From Nothing to Everything* authored by David Christian, Cynthia Brown, and Craig Benjamin.

Developments in Pedagogy—Big History continues to expand as a coherent undergraduate

course at universities around the world. One recent development at the university level has been the establishment of Big History as a mandatory general education course for all incoming first-year students at the Dominican University of California. Not only is this the first institution anywhere in the world to make Big History a required course, but Dominican’s program is also the first to be offered as a cohesive two-semester sequence rather than a single-semester course. As Director of General Education and the First Year Experience program Mojgan Behmand puts it, “We have expanded on the Big History concept in order to develop a course sequence that emphasizes the students’ critical and creative thinking and helps students think about the future of humanity as a species on our planet.” (Mojgan Behmand, Dominican University of California First Year Big History Experience: <http://www.dominican.edu/dominicannews/first-year-experience-focuses-on-big-history>.)

Big History is also emerging as a viable course of instruction in secondary schools, through the development of the Bill Gates-supported Big History Project. The Seattle-based Big History Project team has designed a course for 9th or 10th grade students that uses a web-based instructional model to ensure that content will always remain up-to-date, to relieve schools of the need for expensive textbooks, and to help teachers engage students with media-rich materials that can be

Big History, cont.

used in different ways. During the 2011–12 school year the course has been piloted at a number of high schools in Australia and the USA. In 2012–13 the pilot will be expanded to some 40 schools; and by 2013–14 the course will be made freely available to schools worldwide.

Establishment of the International Big History Association—The last and perhaps most important recent development in terms of the long-term sustainability of the field is the establishment of the International Big History Association (IBHA). This grew out of an August 2010 meeting at the Geological Observatory at Coldigioco in Italy. The Big Historians who met at Coldigioco were David Christian of Macquarie University in Sydney (Australia), Fred Spier of the University of Amsterdam (Netherlands), Walter Alvarez of the University of California at Berkeley (USA), Craig Benjamin of Grand Valley State University in Michigan (USA), Cynthia Brown of Dominican University in California (USA), Lowell Gustafson of Villanova University in Pennsylvania (USA), and Barry Rodrigue of the University of Southern Maine (USA). Also in attendance were Pamela Benjamin, Gina Giandomenico and Penelope Markle who constituted an advisory committee; representatives of the Big History Project and the Microsoft ChronoZoom Project; and graduate geology students from the University of California, Berkeley.

The Big Historians in attendance formally constituted themselves as a provisional executive

committee and voted to establish the International Big History Association, and to hold the first ever international Big History conference in 2012 (later decided to be held at Grand Valley University, Michigan, USA). The embryonic IBHA was fortunate to receive a start-up grant from Microsoft External Research, which facilitated the convening of the first formal meeting of the IBHA Board at Grand Valley State University (GVSU) in January 2011. At this meeting the By-Laws and Articles of Association were constituted and accepted; and an offer from the administration of GVSU to provide an office and assistance for the IBHA to be based at GVSU was accepted. Subsequent meetings of the IBHA Board were held in Beijing (in conjunction with the World History Association Annual Conference which featured a significant Big History component, July 2011); and Moscow (in conjunction with the Global Futures 2045 Conference, which also featured significant Big History input, February 2012). The IBHA has published a formal mission statement: “The International Big History Association (IBHA) exists to promote the unified and interdisciplinary study and teaching of the history of Cosmos, Earth, Life, and Humanity.”

At the time of this writing, the Board of the IBHA consists of David Christian (President); Fred Spier (Vice-President); Lowell Gustafson (Secretary); Craig Benjamin (Treasurer); Barry Rodrigue (International Coordinator); and Board Members Walter Alvarez, Cynthia Brown, Eric Chaisson,

Kathy Schick, Esther Quaedackers and Joseph Voros. In August 2011 the Global Institute for Big History was established within the Brooks College for Interdisciplinary Studies at Grand Valley State University. The GIBH now functions as the head office for the IBHA, and employs an office administrator to manage IBHA affairs. Membership of the IBHA has grown to around 260 (with members coming from a wide range of disciplines and interests); and the first International Big History Association Conference will be held at GVSU between **2 and 5 August 2012**.

Conclusion—This brief overview suggests that Big History is poised for continued expansion as a research and teaching field, and has the potential to make a significant contribution to education and public discourse at all levels. Those of us deeply committed to the field are hopeful of the eventual widespread introduction of Big History into high school and university programs around the world. We are convinced of the genuine pedagogical and societal gains to be made by making Big History the cornerstone of general education programs. The evidence collected over the past two decades has shown that by exposing the leaders of the future to Big History, students learn to use the tools of interdisciplinarity and critical thinking on a macro scale to conceptualize and think about real solutions to the great problems of our times. The future of humanity might well depend on facilitating the acquisition of these skills through widespread Big History education and research.

Blogging, Tweeting, and Other Digital Activities: A Beginner's Guide to the Internet for Early-career Scholars

Melinda Baldwin (York University)

I feel the need to preface this piece with a disclaimer: I am by no means an expert on any of the things named in the title of this article. In fact, I would say that I have been rather slow to figure out how to use the Internet for scholarly networking and professional development. But as I've learned since finishing my PhD, it is becoming increasingly important place for early-career scholars to establish a presence on the web. If someone searches for your name on Google, will you and your work show up on the first page of results? If colleagues look on Academia.edu or Twitter for people interested in your subject, will your name come up? Having a visible digital presence enables you to forge connections with other scholars in your field—which will not only enhance your intellectual life, but can also bring opportunities like contributing to an edited collection or participating on a conference panel.

So how does one go about establishing a scholarly presence on the Web? I am going to discuss four strategies for making yourself visible on the Internet.

1. A Personal Web Site

If you are going on the academic job market, you probably need a web page—having an

electronic CV comes in very handy, and not just for Google search purposes. If you list your page's URL at the top of your physical CV, search committees can visit your web page to obtain a lot more information than you can usually include in an application. Potential colleagues can download your papers, read about your projects, look at sample syllabi or teaching material—in short, they can easily find things they may not ask for in the application but that are nevertheless useful to them.

Many people I know have purchased their own URLs and hosting services, but there are also more low-maintenance (i.e., free) ways to build a web page. First, check to see if you are entitled to space on your University's server. Some universities may have resources to help you create a web page; at others, you may need to learn some FTP (File Transfer Protocol) or HTML, which can be a bit of a hassle if you are not tech-savvy. Furthermore, when you finish a PhD or postdoc, your University page will usually disappear, so make sure to back up your files! However, academic URLs tend to do well in Google searches, so they may be worth the extra effort.

The blogging service Wordpress is also a handy way to create a basic personal web site. For

a good example, see Joanna Radin's page at <http://joannaradin.com/wordpress/>. Radin, now an assistant professor at Yale, built her Wordpress site while a graduate student at the University of Pennsylvania. If you want your own URL (as Radin did), Wordpress will register it for you at a very reasonable \$18 per year. The drawback is that Wordpress's free page designs are somewhat limiting; design-savvy academics will likely prefer the greater freedom that a University or self-hosted web site gives them.

2. Social Networking

Online social networks can be incredibly valuable places to connect with other scholars interested in your field. I currently maintain the **John Tyndall Correspondence Project's Facebook Community page**, where I post interesting excerpts from Tyndall's letters and updates on Project news. A Community page has worked quite well for the Tyndall Project; anyone with a Facebook account can "like" and follow us without sharing their personal information, and the page is easy to maintain and update.

That said, Facebook is not where I would suggest establishing a personal profile for academic networking purposes. Most users

Blogging, Tweeting, and Other Digital Activities, *cont.*

think of Facebook as a place to play Farmville, post baby pictures, and keep up with high school classmates, not as a place to find potential HSS panelists. In fact, many Facebook users will be reluctant to add their professional contacts as “Friends” because of the personal photos and information they have shared there.

A great professional alternative to a Facebook profile is an **Academia.edu** account. Academia.edu, as the name would suggest, is a social networking site aimed at academics. It allows users to “follow” the updates of their colleagues and post their papers and CVs for other users to download. **Academia.edu** pages are highly ranked in Google searches, which makes them a good substitute for a personal webpage if you really aren’t interested in creating a website.

Finally, more and more academics are signing up for Twitter accounts. Twitter is notable for its ability to let its users engage in quick exchanges, “re-tweet” an important or interesting post, and quickly find others interested in similar subjects by searching hashtags (terms with the # symbol in front of them). Another side benefit: Twitter accounts do well in Google searches.

Urban historian Katrina Gulliver (**@katrinagulliver** and **www.katrinagulliver.com**), a longtime Twitter user who coined the handy hashtag #twitterstorians and won the History News

Network’s award for the best Twitter feed, recently wrote a piece for the *Chronicle of Higher Education* on Twitter use for scholars. Gulliver’s piece can be read on the web at **<http://chronicle.com/article/10-Commandments-of-Twitter-for/131813/>**. I highly recommend it to those who are new to Twitter—or those (like me) who are still figuring out how to use it.

3. Blogging

A number of my colleagues have begun blogging about their academic work to entertaining and insightful effect. Just to name a few examples in the history of science, Alex Wellerstein at the Center for the History of Physics maintains a terrific blog called Restricted Data: The Nuclear Secrecy Blog (**<http://nuclearsecrecy.com/blog/>**). American Science (**<http://americanscience.blogspot.com/>**) is a team blog which began as an outgrowth of the History of Science Society’s Forum for the History of Science in America. There are currently six bloggers who write a combination of conference recaps, discussions of interesting recent news, and more theoretical pieces on topics like the relationship between the history of capitalism and the history of science. Will Thomas at Imperial College London maintains a blog called Ether Wave Propaganda (**<http://etherwave.wordpress.com/>**), which

specializes in historiographical issues in the history of science.

Since I don’t blog myself, I asked people who do about what their blogging has done for them as scholars. A few common themes emerged. First, a blog enables its writers to build and maintain connections with other scholars. Joanna Radin, who blogs for American Science and also maintains a Tumblr about her work called Curating Cold (**<http://curatingcold.tumblr.com/>**), wrote that a blog can create “a channel for keeping up with colleagues in between the big annual meetings. It’s a way to maintain conversations or start new ones.” Thomas from Ether Wave Propaganda echoed that sentiment; a blog, he said, can “keep you in contact with far-flung scholars working on your topic.” Second, blogging can provide a space to explore theoretical issues or potential new projects, often in conversation the blog’s readers. Thomas from Ether Wave Propaganda wrote that his blog “has allowed me to figure out what precisely what sorts of projects and writing I want to undertake.” Similarly, Henry Cowles, a Princeton graduate student who blogs for American Science, said that blogging has “helped me formulate how I want to position myself as a member of the field and as an author vis-a-vis my actors.” Third, many bloggers enjoy the chance to

Blogging, Tweeting, and Other Digital Activities, *cont.*

exercise a slightly different set of writing skills. Wellerstein said that the “need to produce short, readable bits of content on a regular basis really does change how I think and write about my subject, and I think there’s been a real benefit to my more academic work.” Finally, several people mentioned that the feedback they get from blogging has been helpful. Dan Bouk, an assistant professor at Colgate University and another American Science blogger, wrote that unlike academic articles or books, which can spend months and years reaching print, “Blog posts often get nearly immediate responses online.”

4. Other Digital Projects

Blogging isn’t the only way to go if you’re interested in making your scholarship accessible to new audiences on the Web. Those who are interested in a non-text-based project might consider a podcast. Gulliver has started a “**Cities in History**” podcast, which she describes as “an exercise in expressing some of the themes of my work for a general audience.” Gulliver scripts out her podcasts in advance, drawing on relevant sources from her research. The podcast (available for download on iTunes) has led to an invitation to contribute to an edited volume.

Another internet-based project that I think is performing a terrific service

to scholars is the *Dissertation Reviews* (<http://dissertationreviews.org/>) website. It’s a growing project that publishes friendly reviews of young scholars’ dissertations; the site added science studies to its coverage last year. Reading *Dissertation Reviews*, or writing reviews for them, is a great way to learn about what’s happening in science studies and to make contact with people who work in areas similar to yours. (In the interest of transparency, I should mention that my dissertation was reviewed on this site and that I have written a review for them as well.)

More ambitious technophiles may find inspiration in another Wellerstein project, Nukemap (<http://nuclearsecrecy.com/nukemap/>), a nuclear effects calculator which shows users the blast radius that would accompany dropping a nuclear bomb on any target on Google Maps. The site went viral and news outlets including ABC News, NPR, the *Toronto Sun*, and *USA Today* wrote about Wellerstein’s project.

Concluding Thoughts

A strong Internet presence can be a major asset for early-career scholars; at the very least, it is important that your academic profile be visible on the first page of Google results when someone searches for your name. But there are potential pitfalls to watch out for. Assume that anything you post could be visible to anyone

regardless of your privacy settings, and that it will be available on the web even if you delete it. (Google “Dartmouth professor Facebook” if you doubt this. Forget diamonds—the Internet is forever.) Users of social networks should avoid getting into arguments with other users (no one wins those arguments) or complaining about colleagues, advisors, and especially students. Early-career scholars should also be cautious about the amount of time spent blogging or networking—that time can easily come at the expense of a dissertation or book. Wellerstein warned that blogging “takes just enough work, and gives just enough immediate reward,” to potentially become “a major distraction.” But, he added, his own blogging “has more than paid off professionally and personally” during his postdoctoral career. If done thoughtfully, blogging, tweeting, and other digital activities have tremendous potential to enhance our scholarly lives.

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